Reviewed 10/03/2022 DLSubject to field inspectors approvals.

City of Puyallup
Development & Permitting Services
ISSUED PERMIT

Building	Planning
Engineering	Public Works
Fire	Traffic

WALMART 2403 PUYALLUP WA

THE APPROVED CONSTRUCTION PLANS AND ALL DOCUMENTS MUST BE POSTED ON THE JOB AT ALL INSPECTIONS IN A VISIBLE AND READILY ACCESSIBLE LOCATION.

PRRF20221329

WALMART 2403 PUYALLUP WA

Table of Contents

August 3, 2022

CLIFFORD-LEE ASSOCIATES - 223355
2803 W. Rainier Road
Rogers, AR 72758
United States of America

Project: Authorized Applicator Letter

To Whom It May Concern:

This letter is to confirm that CLIFFORD-LEE ASSOCIATES - 223355 in Rogers, AR is a Carlisle Authorized Applicator.

If you should have any further questions, please feel free to contact me.

Sincerely,

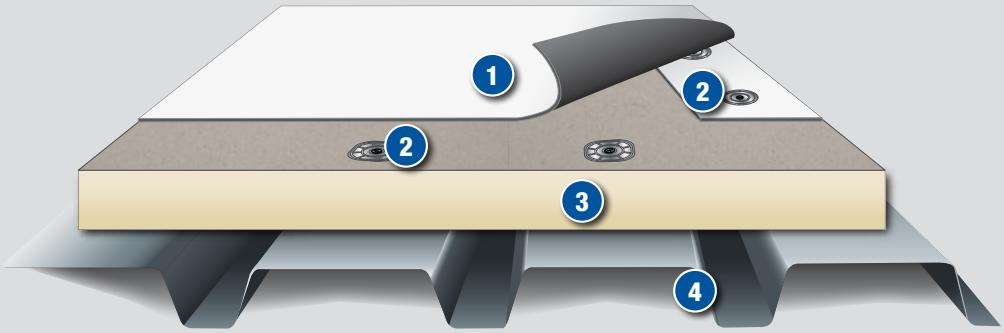
Frank Palmer
Director of Sales

PRRF20221329

CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Mechanically Fastened Systems

Warranty Submittal Sheet



Typical Applications

1. Sure-Weld TPO Membrane
2. Carlisle fasteners and plates
3. Carlisle Approved insulation
4. Approved roof deck

Sure-Weld 5-, 10-, 15-, and 20-year Total System Warranties*

1. **Membrane** (fastened at 12" on center with maximum 10'-wide field sheets)[1,2]:
   - 45-mil Sure-Weld TPO (15-year max.)
   - ✔ 60-mil Sure-Weld TPO
   - 80-mil Sure-Weld TPO
   - 60-mil Spectro-Weld TPO
   - 80-mil Spectro-Weld TPO
   - 45-mil Sure-Weld HS (15-year max).
   - 60-mil Sure-Weld HS
   - 80-mil Sure-Weld HS
2. **Membrane Fasteners:**
   - CD-10 Fasteners (concrete)
   - HP Purlin Fasteners (metal retrofit only)
   - HP-Xtra Fasteners (steel/wood)
   - HD 14-10 Fasteners (concrete)
   - HP-X Fasteners™ (steel/wood)
   - GypTec® Fasteners (gypsum/cementitious wood fiber)
3. **Membrane Seam Plates:**
   - Piranha Plates
   - Piranha Xtra Plates (HP-Xtra fasteners only)
   - GypTec Plates (gypsum/cementitious wood fiber)
   - RhinoBond®/isoweld® Plates
4. **Carlisle Insulation Fasteners** (with insulation plates):
   - HP Fasteners (steel/wood)
   - InsulFast™ Fasteners (steel/wood)
   - ASAP Fasteners (steel/wood)
   - HP-X Fasteners (steel/wood)
   - CD-10 Fasteners (concrete)
   - HD 14-10 Fasteners (concrete)
   - Lite-Deck Fasteners (gypsum/cementitious wood fiber)
   - GypTec Fasteners (gypsum/cementitious wood fiber)
5. **Cover Board** (optional):
   - SecurShield® HD
   - SecurShield HD Plus
   - SecurShield HD Composite
   - DensDeck® (15-year max. on re-cover)
   - SECUROCK® (15-year max. on re-cover)
   - R-Tech™ Fanfold Recovery Board (re-cover or over acceptable insulation)
   - HP Recovery Board (with acceptable insulation, 15-year max. on re-cover)
6. **Carlisle Approved Insulation:**
   - InsulBase® Polyisocyanurate
   - SecurShield Polyisocyanurate
   - Insulfoam EPS (Min. 1.25 lb. density)
   - Insulfoam HD Composite
   - Insulfoam SP
   - XPS
7. **Vapor Barrier** (optional for new or tear-off only):
   - VapAir Seal™ 725TR
   - VapAir Seal MD
   - Polyethylene (by others)
   - Other
8. **Thermal Barrier** (optional for new or tear-off only, not for use directly over concrete decks):
   - DensDeck Prime/DensDeck
   - SECUROCK Gypsum Fiber
   - Other
9. **Deck:**
   - 22-gauge or heavier steel
   - Structural concrete
   - Wood plank
   - Minimum $^{15}/_{32}$" plywood
   - Gypsum
   - Cementitious wood fiber
10. **Metal Edging:**
    - Shop-fabricated metal
    - Carlisle SecurEdge™
    - Metal by others
11. **Applicable Details:**
    MF-1A, MF-2, MF-8, MF-22, MF-27, U-1, U-2, U-3, U-5, U-6, U-8, U-9, U-12, U-13, U-15, U-16, and U-18.**
12. **Construction Type:**
    - New Construction
    - Complete Tear-off
    - Re-cover

    Remove and replace wet or damaged insulation prior to installation.
13. **Slope:**
    18" per foot maximum.

Notes:
1. Over gypsum or cementitious wood fiber decks, maximum 9" on center fastener spacing is required for 10' sheets.
2. Refer to Carlisle's specifications and details for required perimeter enhancements. For buildings 61'-100' tall, enhance membrane fastening to 6" on center.

*Buildings up to 60' tall with 55-mph wind speed coverage. Projects requiring warranty wind speeds greater than 55-mph should be reviewed by a Carlisle representative. All products must be supplied by Carlisle to be included in the warranty coverage. All roof systems can only be accepted upon inspection by a Carlisle SynTec Field Service Representative. Carlisle reserves the right to change or enhance any of the above components due to specific or unique project conditions. The intent of this document is to verify the proposed roof assembly meets the requested warranty. Carlisle is not responsible for local and state building code requirements, and any discrepancy should be clarified by the design professional of record. Refer to Carlisle's most currently published specifications and details for additional information.

**Includes all iterations of each detail. For example; U-1 encompasses U-1A, U1-B, U-C, U-1D, and U-1F.

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Mechanically Fastened Systems

Warranty Submittal Sheet

Insulation Fastening Rates 5-, 10-, 15-year Warranty		Insulation Fastening Rates 20-year Warranty	
Insulation (top layer)	**4' x 8' board**	**Insulation (top layer)**	**4' x 8' board**
Acceptable coverboard and/or insulation	4[1]	Acceptable coverboard and/or insulation	6[1]

[1]Recover projects require 8 fasteners and insulation plates per 4' x 8' board.

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Reinforced Membrane

Productivity Boosting Features and Benefits:

Optional APEEL™ Protective Film

Carlisle's Sure-Weld TPO reinforced membrane is available with an optional APEEL Protective Film, saving time and labor by eliminating the need for roof cleaning upon project completion. Carlisle's innovative APEEL Protective Film can be left in place for up to 90 days without affecting the integrity of the film, guarding the TPO membrane's surface from scuffs and dirt accumulation during installation. Durable and easy to remove, APEEL Protective Film improves aesthetics and long-term reflectivity and is ideal for re-roofing, re-cover, and new construction projects.

Overview

Carlisle's Sure-Weld TPO reinforced membrane is a premium, heat-weldable, single-ply thermoplastic polyolefin (TPO) sheet designed for new roof construction and re-roofing applications. Sure-Weld High Slope (HS) membrane is formulated with additional flame retardant for higher-slope fire code approvals. Sure-Weld EXTRA is 80 mils thick for significantly higher strength and weatherability.

Sure-Weld TPO membranes use advanced polymerization technology that combines the flexibility of ethylene-propylene (EP) rubber with the heat weldability of polypropylene. All Sure-Weld TPO membranes include OctaGuard XT™, an industry-leading, state-of-the-art weathering package. OctaGuard XT technology enables Sure-Weld TPO to withstand the extreme weatherability testing that is intended to simulate exposure to severe climates.

Physical properties of the membrane are enhanced by a strong polyester fabric that is encapsulated between the TPO-based top and bottom plies. The combination of the fabric and TPO plies provides high breaking and tearing strength, as well as excellent puncture resistance. The relatively smooth surface of the membrane produces a total surface fusion weld that results in a consistent, watertight, monolithic roof assembly. The membrane is environmentally friendly and safe to install.

Carlisle's standard and HS TPO membranes are available in highly reflective white, tan, and gray, in both 45-mil and 60-mil thicknesses. 80-mil Sure-Weld EXTRA (including HS) is also offered in white, gray, and tan colors. Special color Sure-Weld HS TPO membranes are also available (see Carlisle's TPO Color Palette brochure). Carlisle's TPO is offered in 4-, and 6-ft perimeter sheets and 8-, 10-, and 12-ft Sure-Weld field sheets. Sure-Weld HS and special color TPO membranes are available in limited sizes.

Carlisle's tan and white TPO membranes are ENERGY STAR®*-qualified and California Title 24 compliant and can contribute toward LEED® (Leadership in Energy and Environmental Design) credits.

OCTAGUARD XT WEATHERING PACKAGE

APEEL PROTECTIVE FILM

Features and Benefits

- Outstanding puncture resistance
- Excellent fire resistant assemblies
- Environmentally friendly and stable formulation
- Excellent resistance to impact and low temperatures
- Excellent chemical resistance to acids, bases and restaurant exhaust emissions
- UL 2218 Class 4 hail rating
- Exceptional resistance to heat, solar UV, ozone and oxidation
- Manufactured using a hot-melt extrusion process for complete scrim encapsulation
- 100% recyclable (see Carlisle's Recyclability Statement)
- Enhanced with the OctaGuard XT weathering package
- APEEL Protective Film application guards the TPO membrane's surface from scuffs and dirt accumulation during installation, improving the roof system's appearance and long-term performance
- APEEL Protective Film can be left in place for up to 90 days without degrading due to its excellent heat- and UV-resistance

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Sure-Weld TPO
Reinforced Membrane

Installation

1. Sure-Weld TPO roofing systems are quick to install, as minimal labor and few components are required. TPO systems are installed using an Automatic Heat Welder, making sheet welding fast, clean, consistent, and easy to learn, while reducing strain on the roofing technician.
2. APEEL Protective Film should be removed from within areas that are to be heat-welded together. In areas that do not require heat-welding, the APEEL Protective Film can be left in place for up to 90 days. When the installation of the entire TPO roofing system is complete, remove and discard the APEEL Protective Film.
3. **The Carlisle Mechanically Fastened Roof System** installation starts by fastening the insulation with a minimum of 4 fasteners per 4' by 8' board. The membrane is mechanically fastened to the deck using HP-X™ Fasteners and Piranha Plates™ or HP-XTRA Fasteners and Piranha XTRA Plates. Adjoining sheets of membrane are overlapped over the fasteners and plates and joined together with a minimum 1½"-wide (4 cm) hot-air weld.

Typical Properties and Characteristics

Physical Property	ASTM D6878 Requirement	45-mil	60-mil	80-mil EXTRA
Tolerance on Nominal Thickness, % ASTM D751 test method	+15, -10	± 10	± 10	± 10
Thickness Over Scrim, in. (mm) ASTM D7635 optical method, average of 3 areas	0.015 min (0.380)	0.018 typical (0.457)	0.024 typical (0.610)	0.034 typical (0.864)
Breaking Strength, lbf (kN) ASTM D751 grab	220 (976 N) min	225 (1.0) min 320 (1.4) typical	250 (1.1) min 360 (1.6) typical	350 (1.6) min 425 (1.9) typical
Elongation Break of Reinforcement, % ASTM D751 grab method	15 min	15 min 25 typical	15 min 25 typical	15 min 25 typical
Tearing Strength, lbf (N) ASTM D751 proc. B 8 in. x 8 in.	55 (245) min	55 (245) min 130 (578) typical	55 (245) min 130 (578) typical	55 (245) min 130 (578) typical
Brittleness Point, °F (°C) ASTM D2137	-40 (-40) max	-40 (-40) max -50 (-46) typical	-40 (-40) max -50 (-46) typical	-40 (-40) max -50 (-46) typical
Linear Dimensional Change, % ASTM D1204, 6 hours at 158°F	± 1 max	± 1 max -0.2 typical	± 1 max -0.2 typical	± 1 max -0.2 typical
Ozone Resistance, no cracks 7X ASTM D1149, 100 pphm, 168 hrs	PASS	PASS	PASS	PASS
Water Absorption Resistance, mass % ASTM D471 top surface only 166 hours at 158°F water	± 3.0 max	± 3.0 max 0.90 typical	± 3.0 max 0.90 typical	± 3.0 max 0.90 typical
Factory Seam Strength, lbf (N) ASTM D751 grab method	66 (290) min	66 (290) min	66 (290) min	66 (290) min
Field Seam Strength, lbf/in (kN/m) ASTM D1876 tested in peel	No requirement	25 (4.4) min 50 (8.8) typical	25 (4.4) min 60 (10.5) typical	40 (7.0) min 70 (12.3) typical
Water Vapor Permeance, Perms ASTM E96 proc. B	No requirement	0.10 max 0.05 typical	0.10 max 0.05 typical	0.10 max 0.05 typical
Puncture Resistance, lbf (kN) FTM 101C, method 2031 (see supplemental section)	No requirement	250 (1.1) min 325 (1.4) typical	300 (1.3) min 350 (1.6) typical	400 (1.8) min 450 (2.0) typical
Properties After Heat Aging ASTM D573, 32 weeks @ 240°F or 8 weeks @ 275°F No cracking when bent around 3" diameter mandrel Weight Change, %	 PASS No cracking ± 1.5 max	 PASS No cracking 1.0 max	 PASS No cracking 1.0 max	 PASS No cracking 1.0 max
Typical Weights lb/ft² (kg/m²)		0.23 (1.1)	0.29 (1.4)	0.40 (2.0)

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

Sure-Weld TPO
Reinforced Membrane

4. **The Carlisle Fully Adhered Roofing System** installation begins by fastening the insulation at the required density necessary to meet the appropriate warranty or wind load requirement. The substrate and membrane are then coated with an appropriate Sure-Weld TPO bonding adhesive and the membrane is rolled into place.

Review Carlisle specifications and details for complete installation information.

Precautions

- Sunglasses that filter out ultraviolet light are strongly recommended, as tan and white surfaces are highly reflective. Roofing technicians should dress appropriately and wear sunscreen.
- Surfaces may become slippery due to frost and ice buildup. Exercise caution during cold conditions to prevent falls.
- Care must be exercised when working close to a roof edge when the surrounding area is snow-covered, as the roof edge may not be clearly visible.
- Use proper stacking procedures to ensure sufficient stability of the rolls.
- Exercise caution when walking on wet membrane. Membranes may be slippery when wet.
- Store membrane in the original undisturbed plastic wrap in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. Membrane that has been exposed to the weather must be prepared with Weathered Membrane Cleaner prior to hot-air welding.
- Take care not to stand or place heavy objects on the edge of folded-over membrane, as this could cause a hard crease in the membrane.
- Maximum sustained temperature not to exceed 160°F (71°C) for TPO membrane.
- Do not use razor blades or other sharp tools to cut the APEEL Protective Film while it is still adhered to the TPO membrane as damage to the underlying membrane may occur. Pull the protective film away from the membrane prior to cutting.
- Remove APEEL Protective Film by pulling towards the center of the roof. Do not remove the film by pulling towards the roof edge.
- A static electric charge may develop when removing APEEL Protective Film from the surface of the membrane sheet. To avoid the possibility of ignition, lids must be closed on any flammable products and a fire extinguisher should be readily available.
- Color membranes will 'fade' over time mainly due to the ultraviolet portion of sunlight. Since most roof surfaces are exposed to variable sunlight, some areas will be more susceptible to color changes caused by UV fading. Warranties for color membranes do not cover fading of colors.

EXTREME Testing for Severe Climates

ASTM Standard D6878 is the material specification for Thermoplastic Polyolefin-Based Sheet Roofing. It covers material property requirements for TPO roof sheeting and includes initial and aged properties after heat and xenon-arc exposure. As stated in the scope of the standard, "the tests and property limits used to characterize the sheet are values intended to ensure minimum quality for the intended purpose." Carlisle's goal is to produce TPO that delivers maximum performance for the intended purpose of roofing membranes. Maximum performance requires the membrane to far exceed the requirements of ASTM D6878.

Heat Aging accelerates the oxidation rate that roughly doubles for each 18°F (10°C) increase in roof membrane temperature. Oxidation (reaction with oxygen) is one of the primary chemical degradation mechanisms of roofing materials.

Carlisle Testing – Heat Aging

	ASTM Requirement	Sure-Weld Requirement
ASTM TEST 240°F	32 weeks**	>128 weeks

**Heat exposure comparable to 3,120 weeks (60 years) at 185°F for 8 hours/day.

- Test specimen is a 2" by 6" piece of 45-mil membrane unbacked, placed in circulating hot-air oven.
- Criterion – no visible cracks after bending aged test specimen around 3"-diameter mandrel.

Q-Trac testing combines accelerated weathering with real-world conditions using an array of ten mirrors to reflect and concentrate full spectrum sunlight onto membrane test specimens. The Q-Trac device automatically tracks the sun's path from morning to night. Also, it adjusts to compensate for seasonal changes in the sun's altitude. Eight years in Q-Trac testing is equal to 40 years of real-world exposure. Carlisle requires its Sure-Weld TPO membranes to pass the equivalent of 40 years of exposure in the Q-Trac.

Carlisle Testing – Q-Trac

	ASTM D6878 Requirement	Sure-Weld Requirement
ASTM TEST N/A	N/A	Equivalent of 40 years of exposure

Environmental Cycling subjects the membrane to repeated cycles of heat aging, hot-water immersion, and xenon-arc exposure.

- ASTM requirement – none
- Carlisle EXTREME test*:
  - 10 days heat aging at 240°F (116°C) followed by

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CARLISLE SYNTEC SYSTEMS

Sure-Weld TPO
Reinforced Membrane

- 5 days water immersion at 158°F (70°C) followed by
- 5,040 kJ/m² (2000 hours at 0.70 W/m² irradiance) xenon-arc exposure

*Test specimen is 2.75" by 5.5" piece of membrane with edges sealed.

*Criterion – after 3 complete cycles, test specimens shall remain flexible and not have any cracking under 10x magnification while wrapped around a 3"-diameter mandrel.

Supplemental Approvals, Statements and Characteristics:

1. Sure-Weld TPO meets or exceeds the requirements of ASTM D6878 Standard Specification for Thermoplastic Polyolefin-Based Sheet Roofing.
2. Radiative Properties for ENERGY STAR, Cool Roof Rating Council (CRRC) and LEED.
3. Sure-Weld TPO membranes conform to requirements of the US E.P.A. Toxic Leachate Test (40 CFR part 136) performed by an independent analytical laboratory.
4. Sure-Weld TPO was tested for dynamic puncture resistance per ASTM D5635-04 using the most recently modified impact head. 45-mil was watertight after an impact energy of 12.5 J (9.2 ft-lbf) and 60-mil was watertight after 22.5 J (16.6 ft-lbf). 80-mil EXTRA was watertight after an impact energy of 30.0 J (22.1 ft-lbf).
5. NSF-P151 Certification for rainwater catchment system components.
   - Plant 91/White Only

LEED Information

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Location	Senatobia, MS Tooele, UT Carlisle, PA
Solar Reflectance Index (SRI)	99 (white) 86 (tan)

Radiative Properties for ENERGY STAR*, and LEED

	Test Method	White TPO	Tan TPO	Gray TPO
ENERGY STAR – Initial solar reflectance	Solar Spectrum Reflectometer	0.79	0.71	N/A
ENERGY STAR – Initial solar reflectance after 3 years	Solar Spectrum Reflectometer (uncleaned)	0.70	0.64	N/A
CRRC – Initial solar reflectance	ASTM C1549	0.79	0.71	0.46
CRRC – Solar reflectance after 3 years	ASTM C1549 (uncleaned)	0.70	0.64	0.43
CRRC – Initial thermal emittance	ASTM C1371	0.90	0.86	0.89
CRRC – Thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.86	0.87	0.88
LEED – Thermal emittance	PASS	0.90	0.86	0.85
SRI - Initial (Solar Reflectance Index)		99	86	53
SRI - 3 year aged (Solar Reflectance Index)		85	77	48

Radiative Properties (Initial) for Special Colors

	Reflectance	Emittance	SRI
Medium Bronze	0.28	0.86	29
Rock Brown	0.25	0.87	26
Slate Gray	0.38	0.87	42
Terra Cotta	0.25	0.86	25
Patina Green	0.25	0.88	25

Solar Reflectance Index (SRI) is calculated per ASTM E1980. The SRI is a measure of the roof's ability to reject solar heat, as shown by a small temperature rise. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is 0 and a standard white (reflectance 0.80, emittance 0.90) is 100. Materials with the highest SRI values are the coolest choices for roofing. Due to the way SRI is defined, particularly hot materials can even take slightly negative values and particularly cool materials can even exceed 100.

*ENERGY STAR recommends that using the Roof Savings Calculator (rsc.ornl.gov), which factors in both heating and cooling costs, to determine whether a cool roof will be an energy efficient choice for your geographic climate and building type.

PRRF20221329

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Low-VOC Bonding Adhesive

Overview

Carlisle's Low-VOC Bonding Adhesive is a high-strength, solvent-based contact adhesive that allows bonding of EPDM and TPO membranes to various porous and non-porous substrates. This product meets the <250 gpl VOC content requirements of the OTC Model Rule for Single-Ply Roofing Adhesives. Low-VOC Bonding Adhesive is compatible with InsulBase® and SecurShield™ polyisocyanurate insulation, structural and lightweight insulating concrete, APA non-fire treated plywood, oriented strand board, wood fiberboard, SECUROCK®, DensDeck® Prime, masonry and various metal finishes. Low-VOC Bonding Adhesive is easily applied with a 9" (228 mm) medium nap roller, creating a strong adhesive bond between the membrane and substrate.

This product does not comply with the following California counties' VOC regulations: Alameda, Contra Costa, El Dorado, Los Angeles, Marin, Napa, Orange, Riverside, Sacramento, San Bernardino, San Diego, San Francisco, San Mateo, Santa Clara, Solano, Sonoma and Tehama. These areas require the use of Carlisle's LOW-VOC Bonding Adhesive 1168.

Features and Benefits

- Can be applied with a medium nap roller for easy application
- Compatible with EPDM or TPO membranes and a variety of substrates
- Extended open time

Mixing

Stir thoroughly once per day until all settled polymers are dispersed and the adhesive is a uniform yellow color. During mixing, scrape the sides and bottom of the pail until the adhesive is a uniform yellow color with no dark streaks. Keeping the adhesive warm, as well as using an air-operated mixing paddle, will aid in the mixing process.

Coverage Rate

The coverage rate for Low-VOC Bonding Adhesive is 60 square feet (5.6 m²) per gallon finished surface. A 5-gallon pail should cover no more than 300 square feet (28 m²) of finished area. Coverage rates are average and may vary due to conditions on the jobsite. Porous wall surfaces like masonry block require 2 coats of bonding adhesive. Allow primer coat to flash off completely prior to applying the second coat at the required coverage rate of 60 square feet per gallon.

Application

1. Allow membrane to relax for half an hour or longer. Allowing the membrane to relax will result in the roof's surface having a smoother appearance. This is especially true for sheets that have folds or creases. The surface on or against which adhesive is to be applied shall be clean, smooth, dry, free of fins, sharp edges, loose and foreign materials, oil and grease. Depressions greater than ¼" (6 mm) should be feathered using epoxy, mortar or other approved patching material. All sharp projections shall be removed by sweeping, blowing or vacuum cleaning.
2. After the Low-VOC Bonding Adhesive has been thoroughly mixed, apply to the substrate and membrane using a 9" (228 mm) medium nap roller. Application shall be continuous and uniform, avoiding globs or puddles that could result in solvent blisters. Heavy "wet" areas can be re-rolled to break the skin, allowing the solvents to flash off. The solvents in Low-VOC Bonding Adhesive must be allowed to flash-off until the adhesive does not string or transfer to a dry finger touch, but remains tacky. This is called the "tack test". It's recommended to continually monitor the adhesive for flash-off after the application of the adhesive. **Install the membrane after the adhesive passes the tack test to avoid trapped solvent blisters. In hot weather, flash-off time can occur in as little as 5 minutes or less. Temperature, sun, shade or humidity can affect flash-off time.**

   Note: Any coated area that is exposed to rain should be allowed to dry and then recoated. Do not apply adhesive to splice areas or use in conjunction with Carlisle's Pressure-Sensitive products.
3. Roll the membrane onto the adhesive-coated substrate while avoiding wrinkles. Immediately brush down the bonded portion of the sheet with a stiff-bristle push broom to achieve maximum contact. For wall applications, use a neoprene type hand roller after brooming to ensure maximum contact. If blisters occur from trapped solvent, allow the solvent to naturally dissipate for 4 or 5 days and then re-roll or re-broom the membrane so it lays flat.

Review Carlisle specifications and details for complete application information.

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Low-VOC Bonding Adhesive

Precautions

- Review the applicable Safety Data Sheet for complete safety information prior to use.
- Jobsite storage in excess of 90°F (32°C) may affect product shelf life. Prolonged exposure to below-freezing temperatures will cause the adhesive to thicken and eventually solidify in the can. Should the Low-VOC Bonding Adhesive be stored below freezing, restore to room temperature for a minimum of 24 hours prior to use; the adhesive will perform as intended once it is returned to a liquid state. When temperatures are expected to be consistently below 40°F, a heated enclosure or hot box is recommended for jobsite storage. Keep the adhesive warm (60-90°F) for ease of application.
- Low-VOC Bonding Adhesive is EXTREMELY FLAMMABLE. It contains solvents that are dangerous fire and explosion hazards when exposed to heat, flame or sparks. Do not smoke while applying. Do not use in a confined or unventilated area. Vapors are heavier than air and may travel along ground or may be moved by ventilation and ignited by pilot lights, other flames, sparks, heaters, smoking, electrical motors, static discharge or other ignition sources at locations distant from material handling point and flashback. All containers should be grounded when material is transferred from one container to another. A red caution label is required when shipping. A fire extinguisher should be available. In case of fire, use water spray, foam, dry chemical or carbon dioxide. Do not use a solid stream of water, because it can scatter and spread the fire.
- Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately. During application, efforts must be made to prevent fumes from entering the building via air ventilation ducts. Do not place open containers or mix adhesive near fresh air intake units. When possible, shut down or seal off the closest units.
- If swallowed, DO NOT INDUCE VOMITING. Call a physician immediately.
- Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of clean water for at least 15 minutes. Contact a physician immediately.
- Avoid contact with skin. Wash hands thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water. Contact physician if irritation persists.

  Note: To protect hands from irritating ingredients, Carlisle recommends that applicators wear permeation-resistant gloves (that meet ANSI/ISEA 105-2005) when using this product.
- Do not thin Low-VOC Bonding Adhesive. Thinning will affect performance. Excessively thick or gelled material should be discarded.
- These materials are sensitive to atmospheric moisture; heat will accelerate the effect of moisture. Opened containers of bonding adhesive should be used within 48 hours. Adhesive will begin to thicken after this point, making it difficult, and eventually impossible, to control adhesive thickness.
- Adhesive must be allowed to flash-off but not become over dry. If membrane is mated with the substrate prior to the adhesive flashing off, blistering will occur. If membrane is mated with the substrate after the adhesive has over-dried, loose or unadhered areas will occur. Thin application of adhesive increases risk of over-drying.
- KEEP OUT OF THE REACH OF CHILDREN.

Typical Properties and Characteristics

Base	Synthetic rubber
Color	Yellow
Solids	22%
VOC	250 g/l max
Flash Point	0°F (-17°C) closed cup
Brookfield Viscosity	3500 centipoise
Average Net Weight	8.0 lbs/gal (0.96 kg/l)
Packaging	5-gal pail
Shelf Life	1 year

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
VOC Content	< 250 g/L

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CARLISLE SYNTEC SYSTEMS

Weathered Membrane Cleaner

Overview

Let Carlisle simplify your next EPDM or TPO installation with Weathered Membrane Cleaner. Weathered Membrane Cleaner is used to clean both new and in-service Sure-Seal®, Sure-White® and Sure-Tough® EPDM membranes and Sure-Weld® TPO membrane prior to the seaming process. It helps to loosen and remove dirt and other contaminants from the surface of the EPDM and TPO membranes and leaves a suitable surface for welding or the subsequent application of primer. Weathered Membrane Cleaner should be used when preparing EPDM membranes for application of primer, adhesives, SecurTAPE™, Factory-Applied Tape™ (FAT) and flashing. Do not use Weathered Membrane Cleaner on PVC membranes — instead use PVC Membrane Cleaner.

Features and Benefits

- Easily removes dirt and other contaminants from EPDM and TPO membranes
- Prepares EPDM membrane for application of primer, adhesives and tape
- Prepares aged or contaminated TPO membrane for welding

Coverage Rate

Coverage rate depends on the age of the membrane and the amount of dirt/debris on the surface. Assume 400 ft² (37 m²) (one surface) per gallon.

Application

EPDM

1. Remove as much loose material as possible from the membrane surface where the adhesive or pressure-sensitive product will be applied by brooming or wiping the area with a dry rag. Extreme conditions of accumulated dirt may require a low sudsing detergent and water cleaning (rinse area thoroughly with CLEAN water and allow to dry).
2. Saturate a clean HP Splice Wipe (or equivalent) with Weathered Membrane Cleaner. SCRUB the area in a circular motion. Continue to clean the area, changing wipes frequently, until the surface is a consistent color with no streaking. Additional cleaning is required at factory seams (scrub parallel to the seam). Allow to dry.
3. Apply primer according to product instructions and/or roofing system specification.

TPO

Weathered Membrane Cleaner may be used to remove construction dirt or to prepare aged TPO membrane prior to welding.

New TPO:

1. Saturate a clean HP Splice Wipe (or equivalent) with Weathered Membrane Cleaner.
2. Wipe the area to be cleaned until the membrane is a consistent color with no streaking and allow to dry.
3. Weld the cleaned material together with an appropriate hot-air welder.

Welding Aged Material:

1. Using a Primer Pad and Weathered Membrane Cleaner, scrub the area to be welded. (The cleaner will become white with membrane residue during this step of the procedure.)
2. Clean all residue from the area to be welded with an HP Splice Wipe (or equivalent). Allow to dry.
3. Weld the cleaned material together with an appropriate hot-air welder.

Review Carlisle specifications and details for complete application information.

CARLISLE SYNTEC SYSTEMS

Weathered Membrane Cleaner

Precautions

- Review the applicable Material Safety Data Sheet for complete safety information prior to use.
- Weathered Membrane Cleaner is EXTREMELY FLAMMABLE. This product contains materials that are fire and explosion hazards when exposed to heat, flame or sparks. Store and use away from all sources of heat, flame or sparks. Do not smoke while applying. Do not use in a confined or unventilated area. Vapors are heavier than air and may travel along ground to a distant ignition source and flash back. A red caution label is required when shipping.
- During application, efforts must be made to prevent fumes from entering the building via air ventilation ducts. Do not place open containers or mix adhesive near fresh-air intake units. When possible, shut down or seal off the closest units.
- Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
- If swallowed, DO NOT INDUCE VOMITING. Call a physician immediately.
- Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of water for at least 15 minutes. Contact a physician immediately.
- Avoid contact with skin. Wash hands thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water.

  Note: Permeation-resistant gloves (that meet ANSI/ISEA 105-2005) are recommended to be worn when using this product to protect hands from irritating ingredients.
- KEEP OUT OF THE REACH OF CHILDREN.

Typical Properties and Characteristics

Color	Clear
Solids	0%
Flash Point	65°F (18°C)
Boiling Point	260°F (127°C)
Packaging	5-gallon (18.9-liter) closed-top pail 2 x 1-gallon (3.8-liter) closed-top pail

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
VOC Content*	755 grams/liter

*This product is exempt from VOC regulations.

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CARLISLE SYNTEC SYSTEMS

Universal Single-Ply Sealant

Overview

Carlisle's Universal Single-Ply Sealant is a 100% solids, solvent-free, one-part polyether sealant that provides a weather-tight seal to a variety of substrates. Universal Single-Ply Sealant can be used as a sealant above Termination Bar for Sure-Weld®, Sure-Flex™, and Sure-White® fully adhered and mechanically fastened roofing systems. It is also excellent for use in counter flashing, coping, and scupper details.

Features and Benefits

- Excellent adhesion to a variety of substrates
- Low VOC
- Wide range of applications

Coverage Rate

25' (7.6 m) per tube or 600' (183 m) per carton using a ¼" (8 mm) bead.

Application

1. Universal Single-Ply Sealant is a one-component, ready-to-use material that requires no mixing or preparation.
2. Surface preparation: Surfaces shall be dry, clean, and free of all dust or contamination that may negatively affect adhesion. Cleaning with Carlisle's Weathered Membrane Cleaner or Low-VOC Membrane Cleaner may be required.
3. Use a high-quality caulking gun to ensure ease of application.
4. Universal Single-Ply Sealant typically is tack-free in 25 minutes and skins over within 45 minutes. Full cure occurs in 3 to 7 days, depending on temperature and humidity levels.
5. Clean up: Remove excess sealant adjacent to joint prior to cleaning with Carlisle's Weathered Membrane Cleaner or Low-VOC Membrane Cleaner.

Review Carlisle specifications and details for complete installation information.

Precautions

- Store in original, unopened containers in a cool, dry area. Protect unopened containers from heat and direct sunlight. Elevated temperatures will reduce shelf life.
- Do not use Universal Single-Ply Sealant in temperatures below 40°F (4°C).
- For industrial professional use only. May not be repackaged or resold for other than industrial or professional use.
- Avoid prolonged contact with skin.
- Uncured adhesive is an eye irritant. In case of contact with eyes, immediately flush with water.
- Do not ingest. If ingested, contact a physician immediately.
- Review Safety Data Sheet for complete safety information prior to use.
- KEEP OUT OF THE REACH OF CHILDREN.

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CARLISLE SYNTEC SYSTEMS

Universal Single-Ply Sealant

Typical Properties and Characteristics

Color	White
Viscosity	850,000 Cps.
Tack-Free Time	25 minutes depending on temp/humidity
Cure Time	3-7 days depending on temp/humidity
Flow, Sag, or Slump	None (¼"[8 mm] Bead)
Staining	None
Ozone Resistance	Good
UV Resistance	Excellent
Cured Hardness (Shore A)	17-23
Shear Strength	150 PSI
Weight per Carton	26 lbs (11.8kg)
Packaging	24 Cartridges, 10.1 Fl. Oz. (298 mL) each
Shelf Life	12 months, unopened container @ 90ºF (32°C)
VOC Content	22 g/L

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Schoolcraft, MI
Solar Reflectance Index (SRI)	N/A

PRRF20221329

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Cut-Edge Sealant

Overview

Carlisle's TPO Cut-Edge Sealant is a medium solids content, free-flowing, polymeric material designed to be used for sealing cut edges of Sure-Weld TPO Reinforced Membrane. It is available in clear for use with various colors of TPO membrane.

Carlisle TPO Cut-Edge Sealant is used to seal cut edges of TPO Membrane, providing a waterproof barrier where scrim reinforcement is exposed.

Features and Benefits

- Provides excellent sealing of exposed fabric at cut membrane edges
- Squeeze-bottle packaging allows easy, no-mess application
- Available in clear for use with various colors of Sure-Weld TPO membrane

Coverage Rate

Approximately 225' – 275' (70 – 85 m) per 16-oz. bottle when applied with ⅛" (3 mm) bead. Approximately 115' – 140' (35 – 45 mm) per 8-oz. bottle when applied with ⅛" (3 mm) bead.

Application

1. All surfaces to be sealed with TPO Cut-Edge Sealant must be clean, dry and free from oil, grease, dirt and other foreign materials.
2. Apply a ⅛" (3 mm) bead of TPO Cut-Edge Sealant from the plastic squeeze bottle to seal cut edges of reinforced TPO membrane. Do not apply TPO Cut-Edge Sealant on vertical surfaces.
3. Sealant should be tack-free in 2 hours and fully cured in 24 hours depending on weather conditions and application thickness.

Review Carlisle specifications and details for complete installation information.

Precautions

- Review the applicable Material Safety Data Sheet for complete safety information.
- TPO Cut-Edge Sealant is FLAMMABLE – it contains solvents that are dangerous fire and explosion hazards when exposed to heat, flame or spark. Do not smoke while applying. Do not use in a confined area or unventilated area. Vapors are heavier than air and may travel along the ground to a distant ignition source and flashback.
- Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
- If swallowed, DO NOT INDUCE VOMITING. Call a physician immediately.
- Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of water for at least 15 minutes. Contact a physician immediately.
- Avoid contact with skin. Permeation-resistant gloves (that meet ANSI/ISEA 105-2005) recommended. Wash thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water.
- Jobsite storage temperatures in excess of 90°F (32°C) may affect product shelf life. Should the TPO Cut-Edge Sealant be stored at temperatures below 60°F (15°C), restore to room temperature prior to use.
- KEEP OUT OF THE REACH OF CHILDREN

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CARLISLE SYNTEC SYSTEMS

Sure-Weld TPO
Cut-Edge Sealant

Typical Properties and Characteristics

Base	Synthetic Rubber
Color	Clear
Solids	14%
Viscosity	3,500 cps
Flash Point	39°F (4°C)
Net Weight Gallon	7.4 lbs (3.3 kg)
Resistance to:	
Ozone	Excellent
UV	Excellent
Water	Excellent
Packaging	Eight 16-oz. bottles/carton (3.8 L) or two 8-oz. bottles (1.9 L)
Shelf Life	1 year

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Rockland, MA
VOC Content	733 g/L

PRRF20221329

800-479-6832 | P.O. Box 7000 | Carlisle, PA 17013 | Fax: 717-245-7053 | **www.carlislesyntec.com**

Water Cut-Off Mastic

Overview

Let Carlisle simplify your next membrane installation with its Water Cut-Off Mastic. Water Cut-Off Mastic is a one-component, low-viscosity, self-wetting, butyl-blend mastic designed to be used in conjunction with roofing and waterproofing systems. It is primarily used as a sealing agent between various membranes and applicable when membrane is being terminated using a compression-type seal.

Water Cut-Off Mastic is an extremely tacky material and will remain as such when used with compression-type terminations.

Features and Benefits

- Extremely tacky
- Provides a durable compression-type seal between various membranes and parapet wall constructions

Coverage Rate

10 linear feet per tube at the recommended application rate of a ½" bead.

Application

1. All surfaces to be sealed with Water Cut-Off Mastic must be free of moisture, oil, dirt and other foreign materials. Water Cut-Off Mastic cannot be used on insulation.
2. Apply a ½" (13 mm) bead of Water Cut-Off Mastic between the substrate and the edge of the membrane.
3. Apply appropriate termination material and secure to provide constant compression for the Water Cut-Off Mastic.

Review Carlisle specifications and details for complete application information.

Precautions

- Review the applicable Material Safety Data Sheet for complete safety information prior to use.
- Water Cut-Off Mastic is FLAMMABLE – contains solvents that are dangerous fire and explosion hazards when exposed to heat, flame or sparks. Store and use away from all sources of heat, flame or sparks. Do not smoke while applying. Do not use in a confined or unventilated area. Vapors are heavier than air and may travel along ground to a distant ignition source and flash back.
- Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
- If swallowed, DO NOT INDUCE VOMITING. Call a physician immediately.
- Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of clean water for at least 15 minutes. Contact a physician immediately.
- Avoid contact with skin. Wash hands thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water.

  Note: Permeation-resistant gloves (that meet ANSI/ISEA 105-2005) are recommended to be worn when using this product to protect hands from irritating ingredients.

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CARLISLE SYNTEC SYSTEMS

Water Cut-Off Mastic

Typical Properties and Characteristics

Color	Gray
Solids	80%
Flash Point	40ºF (4ºC) Closed Cup
Service Temperature	-40ºF to 200ºF (-40ºC to 93ºC)
Specific Gravity	1.29
Cold Weather Flexibility	Excellent
Average Brookfield Viscosity	1,320,000 cps
Packaging	25 tubes/carton
Clean up	Weathered Membrane Cleaner
Average net weight/carton	28 lbs (13 kg)
Shelf life	1 year, unopened container

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Carlisle, PA
VOC Content	250 g/L

800-479-6832 | P.O. Box 7000 | Carlisle, PA 17013 | Fax: 717-245-7053 | **www.carlislesyntec.com**

Fasteners & Plates

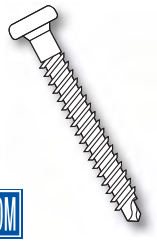
Carlisle SynTec Systems offers an array of fasteners and plates to complement our roofing systems. From pre-assembled choices for EPDM installations to Purlin fasteners for Metal Retrofit Systems and Piranha plates for Sure-Weld® options, our mission continues to be to provide all components necessary for the application of a long-lasting and secure single-ply roofing system from Carlisle.

EPDM Sure-Seal® & Sure-White® EPDM

SW TPO Sure-Weld TPO

SF PVC Sure-Flex™ PVC

HP FASTENER



EPDM

Applicable to steel, 22-gauge and heavier, CDX plywood and wood plank deck types. Can be used to secure Sure-Tough membranes, RUSS and insulation. Longer fastener sizes available as special order.

Sizes Available:
1¼", 2"– 15" (1" Increments)

Size & Quantity Per Box:
2"– 6": 1,000; 7"– 12": 500; 13"– 15": 250
1¼":1000

CD-10

EPDM SW TPO SF PVC

Applicable for concrete decks. Used to secure Sure-Seal, Sure-Weld and Sure-Flex membranes and for insulation securement.

Sizes Available:
2"– 6" (½" Increments)
7"– 12" (1" Increments)

Size & Quantity Per Box:
2"– 8": 500; 9"– 12": 250

HP-X FASTENER™ & HP-XTRA FASTENER

EPDM SW TPO SF PVC

A #15 diameter fastener applicable to steel, wood and CDX plywood. Can be used to secure Sure-Seal, Sure-Weld and Sure-Flex membranes.

Sizes Available:
2"– 8" (1" Increments)
10"– 16" (2" Increments)

Size & Quantity Per Box:
2"– 4": 1,000; 5"– 12": 500; 14"– 16": 250

Size & Quantity Per Box:
500 (2" – 6"), 250 (7" – 8")

HP-XTRA FASTENER

Also Available (Not shown)
A #21 diameter fastener applicable to steel, wood and CDX plywood decks.

Sizes Available:
2" – 8" (1" increments)

INSULFAST™

A #12 diameter fastener applicable to wood decks and steel, 22-gauge and heavier, decks. Used only for insulation attachment.

Sizes Available:
2"– 8" (1" Increments)
1⅝", 2¼", 3"– 8" (1" Increments)

Size & Quantity Per Box:
2"– 8": 1,000

SURE-TITE®

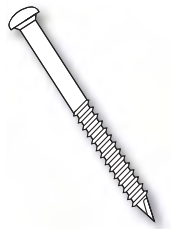
EPDM

A 0.33" diameter fastener applicable to steel, 22-gauge and heavier. Can be used for Sure-Tough membrane securement in mechanically attached systems.

Sizes Available:
2"– 8" (1" Increments)

Size & Quantity Per Box:
2", 3": 500; 4"– 8": 250

HD 14-10



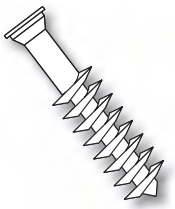
EPDM SW TPO SF PVC

A #14 diameter fastener used for Sure-Tough, Sure-Weld and Sure-Flex membrane securement into wood and concrete decks. Also applicable to insulation securement into steel, wood and concrete decks.

Sizes Available:
2"– 12" (1" Increments)
14"– 24" (2" Increments)

Size & Quantity Per Box:
2"– 4": 1,000; 5"– 11": 500; 12"– 24": 250

GYPTEC FASTENER & PLATE



EPDM SW TPO SF PVC

Applicable to cementitious wood fiber, lightweight concrete and gypsum decks. Can be used to secure Sure-Tough, Sure-Weld and Sure-Flex membranes and insulation.

Sizes Available:
2½"– 10" (½" Increments)

Size & Quantity Per Box:
2½"– 7": 500; 7½"– 10": 250

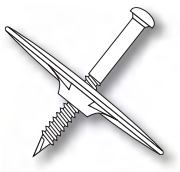
GYPTEC PLATE

Sizes Available:
2" Metal membrane plate
3" Metal insulation plate

Quantity Per Box: 1,000

Fasteners & Plates

ASAP WITH POLYMER PLATE

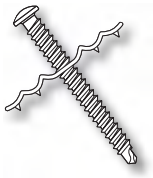


A pre-assembled #12 diameter fastener and plastic insulation plate applicable to steel and wood decks. Used to secure insulation only. Longer fastener sizes available as special order.

Sizes Available:
2¼", 3"– 12" (1" Increments)

Size & Quantity Per Box:
2¼"– 8": 250; 9"– 12": 200

HP-X ASAP



A pre-assembled HP-X Fastener and Piranha Plate™ applicable to steel, wood and CDX plywood decks. Used to secure Sure-Weld and Sure-Flex membranes.

Sizes Available:
2"–10" (1" Increments)
12"–16" (2" Increments)

Size & Quantity Per Box:
2"– 9": 250; 10"– 12": 200; 14"– 16": 150

HP PRE-ASSEMBLED

Pre-assembled HP Fastener and Polymer seam plate applicable to steel, wood and CDX plywood decks. Used to secure Sure-Tough membranes.

Sizes Available:
2¼", 3"– 12" (1" Increments)

Size & Quantity Per Box:
2¼", 3", 3¼", 3¾": 450; 4", 5": 400; 6": 350; 7", 8": 300; 9": 250; 10"– 12": 200

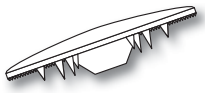
RHINOBOND® PLATE

3"-round, specially coated plates used with HP-X Fasteners and the RhinoBond induction welding system. Available in TPO and PVC versions.

Sizes Available:
3" diameter

Quantity Per Box: 500/carton

HP POLYMER SEAM PLATE



Along with the HP Fastener, used to mechanically fasten reinforced Sure-Tough membrane and RUSS over steel decks.

Sizes Available:
2" diameter

Quantity Per Box: 1,000

HP-XTRA POLYMER SEAM PLATE

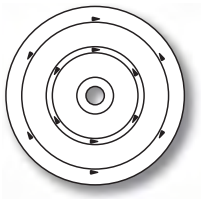
Also Available (Not shown)

For use with HP-XTRA Fastener to secure Sure-Tough membranes to steel decks.

Sizes Available:
2 3/8" diameter

Quantity Per Box: 1,000

PIRANHA PLATE



Along with the appropriate fastener, used to secure Sure-Weld and Sure-Flex membranes to steel, concrete and wood decks.

Sizes Available:
2 3/8" diameter

Quantity Per Box: 1,000

HP-XTRA PIRANHA PLATE

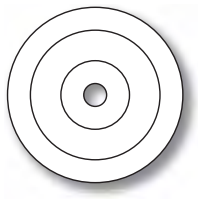
Also Available (Not shown)

For use with HP-XTRA Fastener to secure Sure-Weld and Sure-Flex membranes to steel and wood decks.

Sizes Available:
2 3/8" diameter

Quantity Per Box: 1,000

SEAM FASTENING PLATE

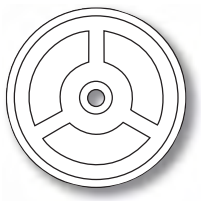


Applicable with HP, HD 14-10 and CD-10 fasteners to mechanically attach reinforced Sure-Tough membrane (excluding steel decks) and RUSS (except when used with mechanically fastened EPDM to steel decks).

Sizes Available:
2" diameter

Quantity Per Box: 1,000

INSULATION FASTENING PLATE



Applicable with InsulFast, HP, CD-10 and HD 14-10 fasteners. Used for insulation securement only on steel, wood and concrete decks.

Sizes Available:
3" diameter

Quantity Per Box: 1,000

REPRINT REQUEST CODE: 600269 - Fasteners & Plates Product Data Sheet - 02.19.13 © 2013 Carlisle.

PRRF20221329

CARLISLE SYNTEC SYSTEMS

Sure-Seal® EPDM
One Part Pourable Sealer

Overview

Sure-Seal One Part Pourable Sealer is a black single component, moisture curing, elastomeric polyether sealant that is compatible with Carlisle's Sure-Seal EPDM membranes. The material is designed to provide a flexible, durable and long lasting seal around hard-to-flash penetrations in Sure-Seal Roofing Systems. Sure-Seal One Part Pourable Sealer provides rapid skin time when exposed to atmospheric moisture forming a waterproof rubber surface in less than one (1) hour. Moisture curing continues, until a two (2) – inch deep solid rubber seal encases the penetration. Complete cure time will vary depending on relative humidity and temperature.

The sealant's one-part, pourable consistency allows for quick pocket filling without mixing. Carlisle's HP-250 or LVOC Primer must be applied to all EPDM surfaces, including cured membrane and uncured flashing, that will be in contact with Sure-Seal One Part Pourable Sealer. Primer should not be applied to the plastic (HDPE) strip that is part of the Sure-Seal Pourable Sealer Pocket. Unused sealant remaining in a pouch will remain useable up to 30 days if pouch is resealed with original cap.

Intended Uses

Sure-Seal One Part Pourable Sealer is designed to provide a flexible, durable and long lasting seal around hard-to-flash penetrations in Sure-Seal Roofing Systems.

Features and Benefits

- Ready to use - no mixing required
- Pouch can be resealed with original cap
- Provides a flexible, durable and long lasting seal around hard to flash penetrations
- Provides a water-tight seal in less than one hour

Coverage Rate

One 0.5-gallon pouch (2-liter) will fill 122 cubic inches of volume within a pourable sealer pocket. For example, one (1) 6" Sure-Seal Pourable Sealer Pocket (56 cubic inches) will require 0.23 gallons (0.87 liters) of pourable sealer to fill completely (with no penetrations).

Application **

1. Bonding surfaces must be free of moisture, dirt, or any contaminants. Any previously applied asphalt, caulking, or sealants must be removed from the penetration(s).
2. Fill any voids in the roof deck around the penetration(s) to prevent sealant from seeping through roof. Install appropriate Sure – Seal pressure sensitive Pourable Sealer Pocket or metal dam in accordance with the appropriate U-16 detail. Minimum pourable sealer depth is 2" (50 mm). Minimum distance from object to side of pocket is 1" (25 mm).
3. Carlisle's HP-250 or LVOC Primer must be applied to all EPDM surfaces, including cured deck membrane and uncured flashing, that will be in contact with Sure-Seal One Part Pourable Sealer. Primer should not be applied to the plastic (HDPE) strip that forms the inside wall of the Sure-Seal pressure sensitive pourable sealer pocket. Allow primer to flash off.
4. Remove cap from 0.5-gallon (2-liter) pouch and pour Sure-Seal One-Part Pourable Sealer directly into pocket. Fill pocket completely until rim is covered with Sure- Seal One-Part Pourable Sealer making sure all voids are filled.
5. To save unused sealant, squeeze air from pouch and replace cap. Unused sealant should be used within 30 days.

Review Carlisle specifications and details for complete installation information.

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CARLISLE SYNTEC SYSTEMS

Sure-Seal EPDM
One Part Pourable Sealer

Precautions

- Review the applicable Safety Data Sheet for complete safety information prior to use.
- Avoid breathing vapors. Keep container closed when not in use. Use with adequate ventilation. If inhaled, remove to fresh air. If not breathing, perform artificial respiration. If breathing is difficult, give oxygen. Call a physician immediately.
- If swallowed, DO NOT INDUCE VOMITING. Call a physician immediately.
- Avoid contact with eyes. Safety glasses or goggles are recommended. If splashed in eyes, immediately flush eyes with plenty of clean water for at least 15 minutes. Contact a physician immediately.
- Avoid contact with skin. Wash hands thoroughly after handling. In case of contact with skin, thoroughly wash affected area with soap and water.
- Do not thin. Thinning will affect performance.
- Shelf life is based on storage in original, unopened or undamaged containers at temperatures ranging from 60°F to 80°F (15°C to 26°C). Should the Sure-Seal One Part Pourable Sealer be exposed to lower temperatures, restore to room temperature prior to use.
- Coverage rates are average and may vary due to conditions of the job site.
- KEEP OUT OF THE REACH OF CHILDREN.

Typical Properties and Characteristics

Specific Gravity	1.4 (11.6 lbs/gallon) - 1.5 (12.5 lbs/gallon)
Viscosity (Brookfield RTV), cps	Self leveling 20,000 - 50,000
Color	Black
Odor	Mild ester smell (mint) when wet. Odorless when dry
Elongation @ Break, % ASTM D-0412 - (7 day ambient cure)	450
Hardness, (Shore A) ASTM C-0661	25 - 35
Tack Free Time ASTM C-0679 - @ 70°F.	Less than 1 hour
Low temperature flex PASS	-20°F (-29°C)
Shrinkage (14 day cure)	No measurable shrinkage
Service temperature ASTM 2453	-40°F (-40°C) to 200°F (93°C)
Long term weatherability ASTM G53 - 98 cycles @ 12 hours/cycle - (condensate exposure - 4 hrs @ 50°C) - (U.V. exposure - 8 hrs @ 70°C)	No crazing or cracking
Packaging	4-0.5 gallon pouches per bucket
Weight Per Carton	29 lbs. / bucket (13.2 kg)
Shelf Life (unopened container)	12 months

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
VOC Content	<25g/L
Manufacturing Location	Schoolcraft, MI

PRRF20221329

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Pressure-Sensitive Coverstrip

Certified Fabricated Accessory

Overview

Sure-Weld TPO Pressure-Sensitive (PS) Coverstrip is a nominal 30-mil (0.76 mm) non-reinforced TPO flashing laminated to a nominal 30-mil (0.76 mm), fully cured synthetic rubber pressure-sensitive adhesive. PS Coverstrip is available in 6" (152 mm) wide x 100' (30.5 m) long rolls and 3 membrane colors - white, gray, and tan.

TPO PS Coverstrip is intended to strip in flat metal flanges (i.e. drip edge or self-flashing curb flanges).

NOTE: TPO PS Coverstrip cannot be used for flashing corners, pipes, T-joints or butt joints on FleeceBACK® TPO systems or any angled metal flanges such as gravel stops or other canted metal edgings.

Carlisle's TPO PS Coverstrip is part of the Certified Fabricated Accessory (CFA) program. Certified Fabricated Accessories are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

Features and Benefits

» Pressure-sensitive adhesive is compatible with a variety of metal finishes and allows for a fast, simple installation with no welding required

Installation

1. Clean the existing membrane (and metal if applicable) with Weathered Membrane Cleaner and HP Splice Wipes or other natural fiber rags. A Carlisle Primer Pad may be necessary to remove a heavy build-up of dirt. Pour a small amount of Weathered Membrane Cleaner over a primer pad and rub area to be primed in a circular motion. Wipe away residual dirt with HP Splice Wipes or other natural fiber rags.
2. Roller-apply TPO Primer or Low-VOC TPO Primer to the area of the membrane and metal to be flashed with a short nap length paint roller. The properly primed area will be uniform in color without streaks and free of globs or puddles.

   *Do not use HP-250 Primer on TPO membrane.
3. The entire surface where the flashing will be applied must be clean. The adhesive on the back of the TPO PS Coverstrip will not adhere to dusted/dirty surfaces. Any residual surface contamination will be detrimental to the bond strength of the adhesive.
4. Install TPO PS Coverstrip immediately after TPO Primer or Low-VOC TPO Primer flashes off to minimize potential dust contamination and to promote adhesion in colder weather.
5. Peel off 10-12" (250-300 mm) of the protective release liner from the TPO PS Coverstrip. Position the flashing over the area to be covered and press down using firm, even hand pressure across the entire area. Continue this process until the full area to be flashed is completed. (Cut-Edge Sealant is not required on edges of TPO PS Coverstrip.)
6. Immediately roll the TPO PS Coverstrip with a 2"-wide (50 mm) silicone roller using positive pressure. Roll across the coverstrip edge, not parallel to the length. In areas where the TPO PS Coverstrip crosses a metal joint, a membrane seam (T-joint) or at an end lap, use a hot-air gun to heat the top surface (TPO flashing) of the TPO PS Coverstrip and crease the material into the step-off. This process reduces the possibility of a water channel forming.
7. To achieve proper adhesion of the TPO PS Coverstrip when jobsite temperatures fall below 40°F (5°C), heat the cleaned/primed area of the membrane with a hot-air gun as the flashing is applied and pressed into place.

Review Carlisle specifications and details for complete installation information.

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CARLISLE SYNTEC SYSTEMS

Sure-Weld TPO
Pressure-Sensitive Coverstrip

Precautions

- TPO PS Coverstrip cannot be used for flashing corners, pipes, T-joints, butt joints on FleeceBACK TPO systems or any angled metal flanges such as gravel stops or other canted metal edgings.
- Avoid prolonged contact with skin. In case of contact with skin, thoroughly wash affected area with soap and water.
- Prolonged jobsite storage temperatures in excess of 90°F (32°C) may affect product shelf life.
- In warm, sunny weather, keep TPO PS Coverstrip rolls in box or in a shaded area until ready to use.
- Storage and use of TPO PS Coverstrip at temperatures below 40°F (4°C) will result in a loss of adhesive tack, and in extreme cases will result in an inadequate bond to the substrate. Overnight storage must be available to keep the temperature of the TPO PS Coverstrip at a minimum of 40°F (4°C). Hot boxes for jobsite storage must be provided to maintain a minimum product temperature of 40°F (4°C).
- TPO PS Coverstrip must be stored in a dry area.
- Due to solvent flash-off, condensation may form on freshly applied TPO Primer when the ambient temperature is near the dew point. If condensation develops, the application of TPO Primer and TPO PS Coverstrip must be discontinued since proper adhesion will not be achieved. Allow the surface to dry and apply a thin freshener coat of TPO Primer to the previously coated surface and apply TPO PS Coverstrip when conditions allow.
- Do not allow waste products (petroleum, grease, oil, solvents, vegetable or mineral oil, animal fats, etc.) or direct steam venting to come in contact with the PS Coverstrip.
- KEEP OUT OF THE REACH OF CHILDREN.

Typical Properties and Characteristics

Physical Property	Test Method	Typical
Tensile Strength, psi (MPa)	ASTM D412	2,500 (17.2) Minimum 2,900 (20.0) Typical
Elongation, %	ASTM D412	600 Minimum 750 Typical
Hardness, Shore A	ASTM D2240	Typical 80
Color		White, gray and tan
Base		Membrane - Non-reinforced TPO Adhesive - Synthtic Rubber
Solids		100%
Nominal Thickness		0.060" (1.52 mm)
Nominal Width		Membrane - 6" (152 mm) Adhesive - 6-¼" (159 mm)
Nominal Length		100 ft. (30.5 m)
Net Weight per Roll		22 lbs. (10 kg)
Packaging		2 Rolls/Carton
Shelf Life		1 Year

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Michigan Center, MI
Solar Reflectance Index (SRI)	N/A

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Coated Metal

Overview

Sure-Weld TPO Coated Metal is a 24-gauge (0.6 mm) galvanized steel sheet that is coated with a layer of .035" non-reinforced TPO flashing. TPO membrane may be welded directly to the coated metal, eliminating the need to strip in the metal with a separate piece of TPO Pressure-Sensitive Coverstrip. The sheet is cut to the appropriate width and used to fabricate metal drip edges or other roof perimeter edging profiles. The metal is available in 4' by 10' (1.2 m by 3.1 m) sheets and comes packaged 10 or 25 sheets per pallet.

Carlisle's TPO Coated Metal is part of Carlisle's comprehensive TPO accessory offering that meets the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

Features and Benefits

- Allows direct welding of TPO membrane to the metal, eliminating the need to strip in edging with additional TPO Pressure-Sensitive Coverstrip.
- Easy to cut and form for creating a variety of edge sizes and profiles.

Installation

1. Install TPO Coated Metal with ⅛" to ¼" (3-6 mm) between adjoining sections.
2. Install 2"-wide (5 cm) duct tape over joints in TPO Coated Metal.
3. Heat-weld 6"-wide (15.5 cm) piece of TPO non-reinforced flashing over joint.
4. Position TPO reinforced membrane and heat-weld to the TPO Coated Metal with a minimum 1½" (4 cm) weld.

Review Carlisle specifications and details for complete installation information.

Precautions

- Store coated metal in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. TPO Coated Metal that has been exposed to the weather must be prepared with Weathered Membrane Cleaner prior to hot-air welding.

Typical Properties and Characteristics

Sheet Size	4' by 10' (1.2 m by 3.0 m)
Weight	1.1 lb/ft^2 (5.4 kg/m^2)
Color	Gray, White, Tan, Patina Green, Rock Brown, Terra Cotta, Medium Bronze, and Slate Gray
Flashing Thickness	0.035" (0.9 mm) nominal
Steel Thickness	0.024" (0.6 mm) nominal (24 gauge)
Steel Type	Hot Dipped Galvanized Steel – G90
Conforms to ASTM A653	
Packaging	10 or 25 sheets per pallet - White, Gray, and Tan 5 sheets per pallet - Patina Green, Rock Brown, Terra Cotta, Medium Bronze, and Slate Gray

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Franklin Park, IL
Solar Reflectance Index (SRI)	N/A

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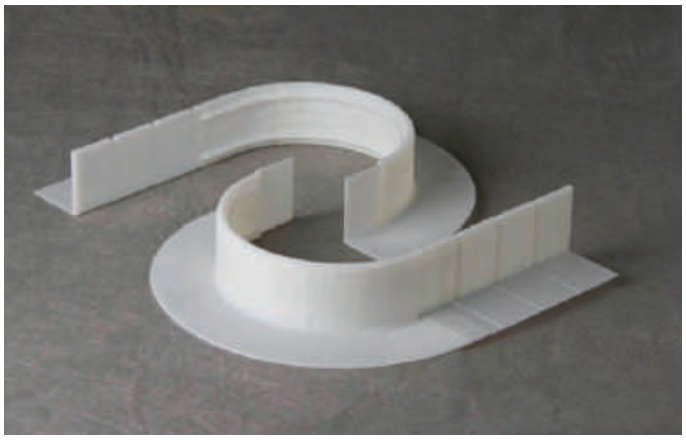
CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Molded Sealant Pockets

Certified Fabricated Accessory



Overview

Let Carlisle simplify your next Sure-Weld TPO installation with Sure-Weld TPO Molded Sealant Pockets. The TPO Molded Sealant Pockets consist of an interlocking, two-piece, injection-molded flexible pocket with a rigid polypropylene vertical wall and pre-formed deck flanges. Pockets can be adjusted from 11 ½" to 7 ½" in length by following the cutting lines molded into the pocket. This product, in conjunction with TPO Primer and White One-Part Pourable Sealer, is used to waterproof pipe clusters or other odd-shaped penetrations on Sure-Weld TPO Roofing Systems.

Carlisle's Sure-Weld TPO Molded Sealant Pockets are part of the Certified Fabricated Accessory (CFA) program. Certified Fabricated Accessories are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

TPO Molded Sealant Pockets are interlocking, two-piece, injection-molded weldable pockets and are used to waterproof pipe clusters or other odd-shaped penetrations.

Features and Benefits

- Provides substantial labor savings compared to field fabricating a sealant pocket from coated metal or other material
- Provides a reliable method to permanently waterproof odd-shaped penetrations
- Professional finished appearance
- Built-in extension legs provide size flexibility
- Molded-in-place cutting lines allow for four different Sealant Pocket sizes

Installation

1. Place the TPO Molded Sealant Pocket around the penetration to determine if reduction of size is required (a minimum of 1" from penetration(s) is needed on any side). Pocket may be adjusted in size by cutting the vertical wall and pre-formed deck flange along any of the molded cutting lines.
2. Clean all the areas of the Molded TPO Sealant Pocket that will be welded (along with all inside surfaces), as well as the deck membrane and penetration(s) with Weathered Membrane Cleaner. Use a Primer Pad with the cleaner if the membrane has been exposed for an extended period of time.
3. Place the TPO Molded Sealant Pocket around penetration(s), overlapping the two sections of the pocket.
4. Cut a piece of cardboard (approx. 4"x4") and place between the overlapping area of the TPO Molded Sealant Pocket and the deck membrane. The cardboard prevents the pocket from welding to the membrane when first welding the overlaps.
5. Using a hand-welder, weld the angle change in overlap area. Using the end of a seam probe assists in this process. The hand-welder temperature setting should be between 5 and 6.
6. Hand-weld the remainder of the horizontal overlap.
7. Repeat steps 4 and 5 to weld the overlap on the other side of the TPO Molded Sealant Pocket.
8. Position the TPO Molded Sealant Pocket so the vertical overlap is against the penetration. This will allow proper pressure to be applied to the overlap with the 2" silicone roller.
9. Weld both vertical overlaps starting at the angle change and progressing to the top of the pocket.
10. After properly positioning the pocket, make tack-welds on all four sides of the flange to hold it in place during the final welding process.
11. Weld the entire horizontal flange to the deck membrane.
12. Once completely cool, using a seam probe, check all splices for voids and cold-welds. Make any needed repairs.
13. Apply a thin coat of TPO Primer to the inside and around the top rim of the pocket, to the deck membrane enclosed by the pocket and to the penetration using a small paint brush.
14. Fill the pocket with sealant. Use an adequate amount of sealant to ensure that contact is made with the top rim of the pocket.

Review Carlisle specifications and details for complete installation information.

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CARLISLE SYNTEC SYSTEMS

Sure-Weld TPO
Molded Sealant Pockets

Precautions

- Temperature of penetration shall not exceed 160°F (71°C).
- The inside of the sealant pocket and all penetrations must be cleaned with Weathered Membrane Cleaner then coated with TPO Primer prior to filling with sealant.
- Carlisle's White One-Part Pourable Sealer must completely fill sealant pocket.
- The walls of the sealant pocket must be a minimum of 1" from any penetration.
- UV filtering sunglasses are strongly recommended when working on Sure-Weld Roofing Systems.
- Store sealant pockets in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. Pre-fab Sealant Pockets or membrane that have been exposed to the weather must be prepared with Weathered Membrane Cleaner prior to hot-air welding. Primer pads must be used if the membrane has been exposed for an extended period of time.

Typical Properties and Characteristics

Size	6" wide x 2" high. Can be adjusted from 7 ½" to 11 ½" in length
Packaging	5 Pockets/Carton
Weight (each)	0.75 lbs (0.34 kg)
Material	Injection-Molded TPO
Color	White, Gray, Tan

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Bloomingdale, IL
Solar Reflectance Index (SRI)	N/A

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REPRINT CODE: 601655 TPO-1029 - "Sure-Weld Molded Sealant Pockets Product Data Sheet"

CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Split Pipe Seals

Certified Fabricated Accessory

Overview

Carlisle's Sure-Weld TPO Split Pipe Seals are prefabricated flashings made from specially designed 60-mil reinforced TPO Detail Membrane that allows for the elimination of T-Joint Covers at crossovers. Designed to fit pipes ranging from 1" (25.4 mm) to 6" (152.4 mm) in diameter, TPO Split Pipe Seals can be used to wrap round pipes with obstructions that would prevent the use of a standard pre-molded pipe seal.

TPO Split Pipe Seals are available in standard white and are packaged 8 per carton. Each carton also contains 8 universal clamping rings. Additional sizes and colors are available on a special-order basis.

Carlisle's TPO Split Pipe Seals are part of the Certified Fabricated Accessory (CFA) program. Certified Fabricated Accessories are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

Features and Benefits

- Special, more flexible TPO Detail Membrane allows for the elimination of T-Joint Covers at crossovers
- Simplifies the contractor's job when flashing a pipe with an obstruction
- Easier to work with in colder temperatures
- Required on 25- or 30-year warranties

Productivity Boosting Features and Benefits:

- Up to 60% labor savings compared to traditional field fabrication
- Quick and simple installation with no stretching required
- Provides a consistent, finished appearance

Installation

Confirm the outside diameter of the pipe to be flashed as most pipe sizes refer to inside diameter. TPO Split Pipe Seals indicate the maximum outside diameter they will fit, not the size pipe they will fit. For example, a 2" PVC pipe has a 2⅜" outside diameter, therefore a 3" Split Pipe Seal is required to fit the 2" inside diameter of the pipe.

Each Split Pipe Seal can fit a pipe with an outside diameter that is 1" smaller than the Split Pipe Seal's stated size. A 3" Split Pipe Seal can fit pipes with a 2" to 3" outside diameter.

1. Wrap the TPO Split Pipe Seal around the pipe until the vertical leg is tight against the outside of the pipe.
2. Mark the pipe around the top of the TPO Split Pipe Seal.
3. Remove the TPO Split Pipe Seal from around the pipe.
4. Install Water Cut-Off Mastic below the mark indicating the top of the installed TPO Split Pipe Seal.
5. Wrap the TPO Split Pipe Seal back around the penetration until the vertical leg is tight against the outside of the pipe.
6. Tack-weld the back edge of the pipe seal's vertical leg, ensuring that good contact is maintained between the TPO Split Pipe Seal and the pipe. This process will hold the TPO Split Pipe Seal in place.
7. Heat-weld the entire width of the vertical overlap. Hand-roll against the outer surface of the pipe to create the pressure necessary to achieve an acceptable weld.
8. Heat-weld the base flange to the deck membrane and complete the horizontal overlap weld.
9. Once the flashing has completely cooled, check all splices for voids and cold welds. Make any needed repairs.

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CARLISLE SYNTEC SYSTEMS

Sure-Weld TPO
Split Pipe Seals

10. Install a stainless steel universal clamping ring to provide constant compression of the sealant.
11. Apply TPO Cut-Edge Sealant to all edges of the TPO Split Pipe Seal that are located on the horizontal plane. Do not apply the sealant to vertical surfaces.

Review Carlisle specifications and details for complete installation information.

Precautions

- Remove all lead and other flashing.
- Temperature of pipe must not exceed 160°F (71°C).
- Install a minimum of four fastening plates around pipe penetrations on mechanically fastened systems. Position fastening plates around the penetration so the plates are covered by the TPO Split Pipe Seal flange. A minimum 1½"-wide weld must be maintained around the outer edge of the flange beyond the plates. If fastening plates cannot be installed in a manner to allow a minimum 1½" weld, the plates must be placed outside the pipe seal flange and covered with a heat-welded reinforced TPO overlay.
- Store pipe seals in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. TPO Split Pipe Seals or membrane that have been exposed to the weather prior to use must be prepared with Weathered Membrane Cleaner prior to hot-air welding.

Typical Properties and Characteristics

Sizes	1", 2", 3", 4", 5", and 6" O.D. Pipe (25.4, 50.8, 76.2, 101.6, 127.0, and 152.4 mm)
Packaging	8/box
Weight (box)	1" 4 lbs (2 kg) 2" 5 lbs (2 kg) 3" 5 lbs (2 kg) 4" 6 lbs (3 kg) 5" 6 lbs (3 kg) 6" 6 lbs (3 kg)
Material	Reinforced 60-mil TPO Detail Membrane
Color	White (Gray and Tan are available via custom order)

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Piedmont, SC Eugene, OR
Solar Reflectance Index (SRI)	White:99

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Universal Corners

Certified Fabricated Accessory

Overview

Carlisle's labor-saving, pre-molded Sure-Weld TPO Universal Corners are ideal for flashing corners on a variety of details.

Carlisle's Sure-Weld TPO Universal Corners are a part of the Certified Fabricated Accessory (CFA) program. CFAs are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

Features and Benefits

- Conforms easily to details on new construction installations, where right angles are common
- Each Universal Corner can be cut into one outside corner or one inside corner
- Large, 6"-wide deck flange reduces the need for T-Joint Covers (when used as an outside corner)
- Provide a substantial labor savings compared to field-fabricating from non-reinforced flashing
- More professional, consistent appearance than field-fabricated corners

Productivity Boosting Features and Benefits:

- Up to 60% labor savings compared to traditional field fabrication
- Quick and simple installation with no stretching required
- One product to utilize for both an inside or outside corner

Installation

See the diagram on page two for cutting instructions. The cutting instructions are also molded into each part. Use a lower temperature setting on the heat welder than when welding reinforced TPO membrane. Typically, a setting of 6 on a scale of 10 is appropriate for welding Universal Corners.

Outside Corner

1. Clean the surface to be welded with Weathered Membrane Cleaner.
2. Place the outside Corner into position over the outside intersection of the corner.
3. Begin welding at the bottom point of the outside corner. Weld straight up the vertical portion of the corner. Weld each side of the outside corner, working from the inside toward the outside.
4. Weld the bottom flange starting on the inside and working towards the outer edges. Use the edges of the roller to crease the corner into any membrane step-off to create a proper seal.
5. Once the material has completely cooled, probe all welded edges of the corner to ensure watertight performance.

Inside Corner

1. Clean the surfaces to be welded with Weathered Membrane Cleaner.
2. Position the inside corner into the corner setting. Begin welding at the innermost corner point and work up and away from the corner. Weld each side of the inside corner, working from the inside toward the outside.
3. Weld the bottom flange starting on the inside and working towards the outer edges. Use the edge of the roller to crease the corner into any membrane step-off to create a proper seal.
4. Once the material has completely cooled, probe all welded edges of the corner to ensure watertight performance.

Review Carlisle specifications and details for complete installation information.

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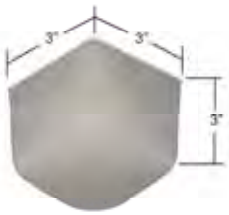
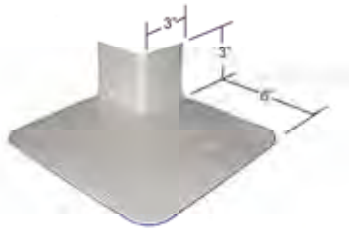
CARLISLE SYNTEC SYSTEMS

Sure-Weld TPO
Universal Corners

Each Universal Corner can be cut into one Inside or Outside Corner.



Inside Corner



Outside Corner

Typical Properties and Characteristics

Thickness	0.060" (1.5 mm)
Packaging	20 per carton
Color	White, gray and tan
Material	Injection-molded TPO

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Bloomingdale, IL

Precautions

» Store TPO Universal Corners in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. TPO Universal Corners or TPO membrane that has been exposed to the weather prior to use must be prepared with Weathered Membrane Cleaner before hot-air welding.

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CARLISLE SYNTEC SYSTEMS

SecurEdge™ Term Bar Fascia

Overview

Carlisle's SecurEdge Term Bar Fascia features a 1.75"-wide formed aluminum termination bar with pre-slotted fastening holes for ease of locating and installing. The decorative cover is available in .040" aluminum or 24-gauge galvanized steel. SecurEdge Term Bar Fascia is manufactured in 12' lengths for fewer joints/seams, fewer sections to handle, and faster installation.

Features and Benefits

- 1.75" bar and decorative cover provides a cleaner finished look than standard termination bar
- Manufactured in convenient 12' lengths with pre-punched slotted fastening holes to ensure proper fastener placement
- Can be used as an economical option for roof edge securement
- ANSI/SPRI ES-1 tested to comply with International Building Code (IBC)

Installation

For complete installation instructions, refer to Carlisle specifications and details or visit www.carlislesyntec.com.

Finishes

- Natural mill finish aluminum
- Kynar 500 from Carlisle's SecurEdge 200/2000 standard color chart
- Premium metallic Kynar 500
- Anodized aluminum – clear, bronze, or black
- Custom post-painted Kynar finishes available upon request

Quality Assurance

Tested per ANSI/SPRI Test Method RE-2 Pull-off Test for Fascia. Fascia shall be certified by Carlisle to design pressures as indicated in current edition of SPRI's Wind Resistance Standard for Edge Systems Used with Low-Slope Roofing Systems. Meets International Building Code.

Technical Services

Engineering and shop drawings, as well as long-form specifications and CAD details, are available from Carlisle. Product samples, detail sheets, color chips, and color charts are also available for submittal packages. For assistance with questions or submittals, contact Carlisle or your local manufacturer's representative.

Specifications

Fascia Size	Anchor Bar Material	Cover Material
1.75"	.063"	.040" aluminum or 24-gauge galvanized steel

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Inside Corners

Certified Fabricated Accessory

Overview

Let Carlisle simplify your next Sure-Weld TPO installation with prefabricated Inside Corners. TPO Inside Corners are pre-molded and are used for flashing inside corners on a variety of details. Installation is fast and easy with no cutting or stretching required.

Carlisle's TPO Inside Corners are part of the Certified Fabricated Accessory (CFA) program. Certified Fabricated Accessories are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

Features and Benefits

- Forms easily into "out-of-square" corners that are not exactly 90°
- Provides substantial labor savings compared to field fabricating the flashing detail from non-reinforced flashing
- More consistent appearance than inside corners field-fabricated from flashing

Installation

1. Position the TPO Inside Corner into the building corner, begin welding at the innermost corner point and work away from the corner.
2. Use a lower temperature setting on the heat welder than when welding reinforced TPO membrane. (Typically a setting of 6 on a scale of 10 is appropriate for welding TPO Inside Corners).
3. Use the edge of the roller to crease the corner flashing into any membrane step-off to create a proper seal.
4. Probe all welded edges of the corner only once the material has completely cooled to ensure watertight performance.

Review Carlisle specifications and details for complete installation information.

Precautions

- Store TPO Inside Corners in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. TPO Inside Corners or TPO membrane that has been exposed to the weather prior to use must be prepared with Weathered Membrane Cleaner before hot air welding.

Typical Properties and Characteristics

Thickness	0.060" (1.5 mm)
Packaging	12/bag
Color	White, Gray, Tan
Material	Injection molded

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Bloomingdale, IL
Solar Reflectance Index (SRI)	N/A

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
T-Joint Covers

Certified Fabricated Accessory

Overview

Let Carlisle simplify your next Sure-Weld TPO installation with molded T-Joint Covers. Sure-Weld TPO T-Joint Covers are used to seal step-offs at splice intersections. T-Joint Covers are mandatory on all 60- and 80-mil TPO systems and on 45-mil systems where step-offs have not been properly sealed. Sure-Weld TPO T-Joint Covers consist of 60-mil non-reinforced TPO formed into a perfect 4.5"-diameter circle and packaged 100 parts per carton. Available in white, tan and gray.

Carlisle's Sure-Weld TPO T-Joint Covers are part of the Certified Fabricated Accessory (CFA) program. Certified Fabricated Accessories are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

Features and Benefits

- Every T-Joint cover is a perfect 4.5" diameter circle
- More consistent appearance than hand-cut flashing
- Provides substantial labor savings compared to field-cut flashing
- Seals channels at splice intersections created by seam step-offs

Installation

1. If membrane has been exposed to the weather, clean splice intersection area with Weathered Membrane Cleaner.
2. Use a lower temperature setting on the hand heat welder than that used for welding reinforced TPO membrane. (Typically a setting of "6" on a scale of "10" is appropriate for welding TPO T-Joint Covers.)
3. Center the T-Joint Cover over the splice intersection, begin welding at the center point and work towards the outside. Use the edge of the roller to crease the T-Joint cover into membrane step-offs to achieve a proper seal.
4. Using a probe, check all splices for voids and cold welds only once the T-Joint Cover has completely cooled. Make any needed repairs.

Review Carlisle specifications and details for complete installation information.

Precautions

- The TPO T-Joint Cover is not intended to overlay fasteners and plates as this requires the use of reinforced membrane.
- Store T-Joint Covers in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. T-Joint Covers that have been exposed to the weather must be prepared with Weathered Membrane Cleaner before hot-air welding.

Typical Properties and Characteristics

Size	4.5" (114 mm)
Thickness	0.060" (1.5 mm)
Packaging	100 per box
Weight (per box)	3.5 lbs. (1.6 kg)
Material	Non-Reinforced TPO
Color	White, Gray, Tan

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Bloomingdale, IL
Solar Reflectance Index (SRI)	N/A

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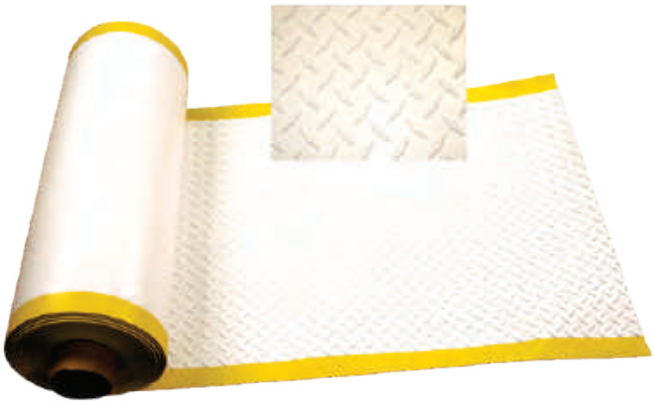
CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Walkway Rolls

Certified Fabricated Accessory



Overview

Carlisle's Sure-Weld heat-weldable Walkway Roll is designed to protect the Sure-Weld TPO membrane in areas exposed to repetitive foot traffic and other hazards. Walkways must be installed at all traffic concentration points (i.e, roof hatches, access doors, rooftop ladders, etc.) regardless of traffic frequency. Walkways must also be installed if regular maintenance (once a month or more) is necessary to service rooftop equipment.

Carlisle Sure-Weld Walkway Rolls are part of the Certified Fabricated Accessory (CFA) program. Certified Fabricated Accessories are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required by Carlisle.

Features and Benefits

- Increased slip resistance created with a diamond plate tread pattern
- Walkway edges are trimmed in safety yellow to better define the designated traffic flow
- The yellow edges are smooth without tread lugs for easier welding
- Superior weathering package for long term performance
- Stocked in white, tan and gray, special colors available (minimum quantities apply)

Installation

1. Use Weathered Membrane Cleaner to prepare the membrane to be welded to the walkway material.
2. Position the walkway material. Cut the Walkway Rolls into maximum 10' lengths and position with a minimum 1" gap between adjacent pieces to allow for water drainage. Cut the walkway so a 4" minimum gap is created over any field splices. Since the attachment of the walkway to the membrane is permanent, this will allow access to the field seams.
3. Using an automated welder, **weld all four sides of the walkway material to the membrane.** Typically the same speed and temperature settings will be used for this procedure as for welding membrane to membrane. A test weld is always recommended prior to performing welds to the installed membrane. A hand held welder may be utilized, however, productivity will be decreased.

Review Carlisle specifications and details for complete installation information.

Precautions

- Walkway Rolls are a maintenance item and are not covered under the Carlisle membrane systems warranty.
- This product is to be used as a walkway only and is not designed as a perimeter warning line or a substitute for ballast. For safety reasons, walkway rolls should not be installed within 10' (3m) of the roof perimeter.
- Allow the walkway to relax and warm up in the sun prior to welding in place.
- When possible, weld the walkway rolls when the ambient temperature is above 60˚ F (16˚ C) to help prevent wrinkles.

Typical Properties and Characteristics

Physical Property	Test Method	Typical Properties	
		Minimum	Maximum
Dimensional Conformance Thickness, in. (mm)	ASTM D412	0.160 (4.06)	0.180 (4.5)
Density, lbs./ft³; (gr/cm³;)	ASTM D792	80.5 (1.29)	84.3 (1.35)
Tensile Strength, psi (MPa)	ASTM D638	600 (4.1)	
Tear Strength, lbf/in (kN/m)	ASTM D624	100 (17.5)	
Sizes	34" wide x 50' long		
Packaging	9 per skid, each roll individually bagged		
Weight (each)	97 lbs.		
Thickness	80-mil at bottom of tread, 80-mil at yellow welding edge, 170-mil overall		
Color	White, gray and tan		

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Walkway Rolls

LEED® Information

Pre-consumer Recycled Content	10%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL

Radiative Properties for Cool Roof Rating Council (CRRC) and LEED

	Test Method	White TPO	Tan TPO	Gray TPO
CRRC – Initial solar reflectance	ASTM C1549	0.79	0.71	0.46
CRRC – Solar reflectance after 3 years	ASTM C1549 (uncleaned)	0.70	0.64	0.43
CRRC – Initial thermal emittance	ASTM C1371	0.90	0.86	0.89
CRRC – Thermal emittance after 3 years	ASTM C1371 (uncleaned)	0.86	0.87	0.88
LEED – Thermal emittance	ASTM E408	0.90	0.86	0.85
SRI - Initial (Solar Reflectance Index)	ASTM E1980	99	86	53
SRI - 3 year aged (Solar Reflectance Index)	ASTM E1980	85	77	48

Solar Reflectance Index (SRI) is calculated per ASTM E1980. The SRI is a measure of the roof's ability to reject solar heat, as shown by a small temperature rise. It is defined so that a standard black (reflectance 0.05, emittance 0.90) is 0 and a standard white (reflectance 0.80, emittance 0.90) is 100. Materials with the highest SRI values are the coolest choices for roofing. Due to the way SRI is defined, particularly hot materials can even take slightly negative values and particularly cool materials can even exceed 100.

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Pipe Seals

Certified Fabricated Accessory

Overview

Let Carlisle simplify your next Sure-Weld TPO installation with TPO Molded Pipe Seals. TPO Pipe Seals are injection-molded, pre-formed flashings for pipes ¾" (19.0 mm) to 8" (203.2 mm) in diameter. TPO Pipe Seals are packaged in boxes of eight and come with universal stainless steel clamping rings.

Carlisle's TPO Molded Pipe Seals are part of the Certified Fabricated Accessory (CFA) program. Certified Fabricated Accessories are the only factory-fabricated TPO accessories that meet the stringent quality tolerances required to be included in a Carlisle warranted roofing system.

Features and Benefits

- Provides a reliable method of waterproofing round pipe penetrations
- Provides a substantial labor savings compared to field fabricating from non-reinforced flashing
- Provides more consistent appearance than field-fabricated pipe flashings
- Double-ribbed cutting guide provides easier, smoother and straighter cuts
- Rib design also keeps the clamp in the proper position for the life of the roofing system

Productivity Boosting Features and Benefits:

- Up to 60% labor savings compared to traditional field fabrication
- Quick and simple installation with no stretching required
- Provides a consistent, finished appearance

Installation

1. Cut pipe seal between the two raised "ribs" to the desired diameter as illustrated on the flange of the pipe seal. (Do not cut off both raised "ribs".)
2. Pull TPO Pipe Seal over pipe until base flange is in contact with the membrane. (Application of heat to the top portion of the TPO Pipe Seal may be necessary to allow installation over the pipe.)
3. Mark pipe around the top of the TPO Pipe Seal.
4. Pull TPO Pipe Seal upwards on pipe until mark on the pipe is visible.
5. Install Water Cut-off Mastic below mark which indicates the top of the installed TPO Pipe Seal.
6. Pull TPO Pipe Seal back down over pipe and into position.
7. Heat weld the TPO Pipe Seal base flange to deck membrane (the hand-welder temperature setting should be between 5 and 6).
8. Install a stainless steel universal clamping ring to provide constant compression of the sealant.

Review Carlisle specifications and details for complete installation information.

Precautions

- Remove all lead and other flashing.
- Temperature of pipe must not exceed 160°F (71°C).
- When used with mechanically fastened membrane, install a minimum of four fastening plates around pipe penetrations. Position fastening plates around the penetration so the plates are covered by the pipe seal flange. A minimum 1½"-wide weld must be maintained around the outer edge of the flange beyond the plates. If fastening plates cannot be installed in a manner to allow a minimum 1½" weld, the plates must be placed outside the TPO Pipe Seal flange and covered with a reinforced TPO overlay.
- Store pre-molded pipe seals in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. TPO Pipe Seals or membrane that has been exposed to the weather prior to use must be prepared with Weathered Membrane Cleaner prior to hot-air welding.

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CARLISLE SYNTEC SYSTEMS

Sure-Weld TPO
Pipe Seals

Typical Properties and Characteristics

Sizes	¾" to 8" O.D. pipe (19.0 to 203.2 mm)
Packaging	8/box
Weight (each)	0.63 lbs (0.3 kg)
Material	Injection-molded TPO
Color	White, gray and tan

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Bloomingdale, IL
Solar Reflectance Index (SRI)	N/A

Please use the chart below to cross-reference your pipe size with the proper step to cut as shown.

Copper Tubing (C.T.S.)

Nominal tube size	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
Pipe O.D.	.88	1.13	1.38	1.63	2.13	2.63	3.13	4.13	5.13	6.13	N/A
Step of boot used	1	1	1	1½	2	2	3	4	5	6	N/A

Schedule 40 / 80 Steel Pipe - PVC Standard - Polyethylene Pipe IPS

Nominal tube size	¾"	1"	1¼"	1½"	2"	2½"	3"	4"	5"	6"	8"
Pipe O.D.	1.05	1.32	1.66	1.90	2.38	2.88	3.50	4.50	5.56	6.63	8.63
Step of boot used	1	1	1½	1½	2	3	3	4	5	6	8

Cast Iron Pipe

	Pit Class A & Spun 100 – 250					Pit Class B, C & D				
Nominal tube size	2"	3"	4"	6"	8"	2"	3"	4"	6"	8"
Pipe O.D.	2.50	3.96	4.80	6.90	9.50	N/A	3.96	5.00	7.10	9.30
Step of boot used	2	4	5	6	N/A	N/A	4	5	6	N/A

Sewer - Soil Pipe

PVC Plastic SDR 35 & 41 - Cast Iron Soil Pipe no hub - service weight & extra heavy

Nominal tube size	4"	4"	4"	4"	6"	6"	6"	6"	8"	8"	8"	8"
Pipe O.D.	4.22	4.38	4.30	4.62	6.28	6.30	6.30	6.62	8.40	8.38	8.38	8.75
Step of boot used	4	4	4	4	6	6	6	6	8	8	8	8

Conduit EMT

Nominal tube size	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"
Pipe O.D.	.922	1.16	1.51	1.74	2.19	2.88	3.50	4.00	4.50
Step of boot used	1	1	1	1½	2	3	3	4	4

Conduit IMC

Nominal tube size	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"
Pipe O.D.	1.02	1.29	1.63	1.88	2.36	2.85	3.47	3.97	4.46
Step of boot used	1	1	1½	1½	2	3	3	4	4

Conduit Rigid

Nominal tube size	¾"	1"	1¼"	1½"	2"	2½"	3"	3½"	4"	5"
Pipe O.D.	1.05	1.32	1.66	1.90	2.37	2.87	3.5	4	4.5	5.56
Step of boot used	1	1	1½	1½	2	3	3	4	4	5

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CARLISLE SYNTEC SYSTEMS

Sure-Weld® TPO
Non-Reinforced Flashing

Overview

Carlisle's Sure-Weld TPO Non-Reinforced Flashing is a 60-mil thermoplastic polyolefin (TPO)-based membrane available in 12" and 24" by 50' rolls. When the use of prefabricated accessories is not feasible, this product can be used to create inside and outside corners, field-fabricated pipe flashings, sealant pockets, and scuppers. Standard colors are white, tan, and gray.

Features and Benefits

- New and improved TPO Flashing provides 35% more flexibility, making it easier to field-fabricate details
- Compounded with the same OctaGuard XT™ weathering package as Carlisle's Sure-Weld TPO membranes for maximum longevity
- Superior weldability allows for consistent, high-quality seams in penetrations and other critical roof areas
- Available in white, gray, and tan colors to match Carlisle's Sure-Weld TPO membranes

Installation

1. TPO Flashing is used to flash various roofing system details and penetrations. The specific installation method will vary based on the situation.
2. Use a lower temperature setting on the heat welder than when welding reinforced TPO membrane. Typically, a setting of "6" on a scale of "10" is appropriate for welding TPO Flashing.
3. Use the edge of the roller to crease the flashing into any membrane step-offs for a proper seal.

Review Carlisle specifications and details for complete installation information.

Precautions

- Review the applicable Safety Data Sheet for complete safety information prior to use.
- Sunglasses that filter out ultraviolet light are strongly recommended, as tan and white surfaces are highly reflective. Roofing technicians should dress appropriately and wear sunscreen.
- Store TPO Flashing in a cool, shaded area and cover with light-colored, breathable, waterproof tarpaulins. TPO Flashing that has been exposed to the weather for approximately 7 days or longer must be prepared with Weathered Membrane Cleaner prior to hot air welding.

Typical Properties and Characteristics

Properties	ASTM Test Method	Specification
Tolerance on nominal thickness, %	D 412	plus 15/ minus 10
Weight, lb/ft2 (kg/m²), typical		0.30 (1.5)
Tensile strength, min., psi (Mpa)	D 412 Die C	1200 (8.3)
Elongation, ultimate, min., %	D 412 Die C	600
Tear strength, min., lbf/in (kN/m)	D 624 Die C	250 (43.8)
Ozone resistance, 168h @ 100 pphm, 50% ext.	D 1149	No Cracks
Heat aging: 28 days at 240°F (116°C) Tensile strength, min., psi (MPa) Elongation, ultimate, min., % Tear strength, min., lbf/in (kN/m) Linear dimensional change, max. %	D 573 D 412 D 412 D 624 D 1204	 1000 (6.9) 500 200 (35.0) ±4
Resistance to Xenon-arc weathering Xenon-Arc, 10,080 kJ/m² total radiant Exposure, visual condition at 10X	G 155 0.70 W/m² 80°C B.P.T.	No Cracks

Typical properties and characteristics are based on samples tested and are not guaranteed for all samples of this product. This data and information is intended as a guide and does not reflect the specification range for any particular property of this product.

LEED® Information

Pre-consumer Recycled Content	0%
Post-consumer Recycled Content	0%
Manufacturing Location	Greenville, IL
Solar Reflectance Index (SRI)	N/A

PRRF20221329

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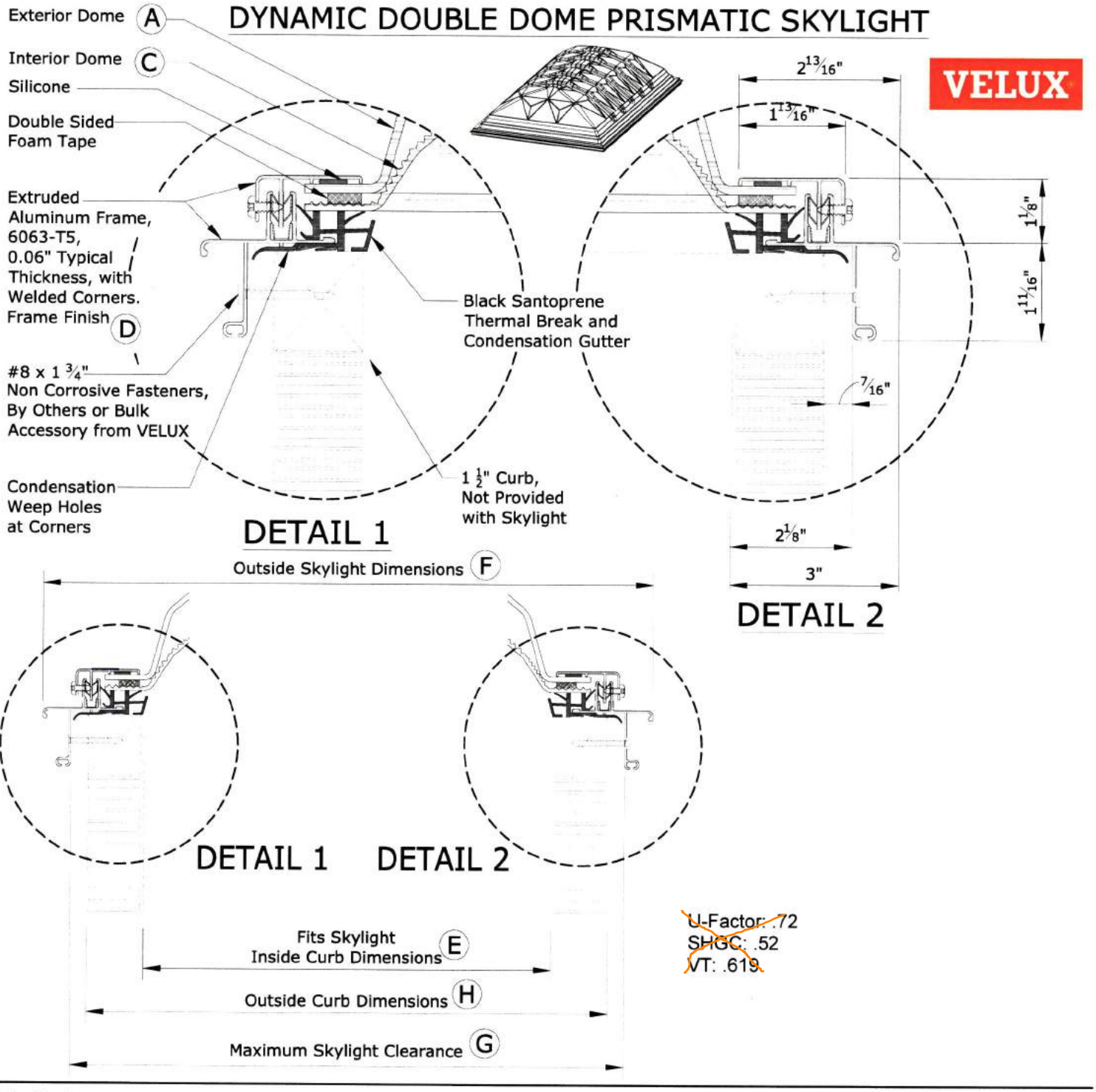
DYNAMIC DOUBLE DOME PRISMATIC SKYLIGHT

VELUX



DETAIL 1

DETAIL 2

DETAIL 1 DETAIL 2

~~U-Factor: .72~~
~~SHGC: .52~~
~~VT: .619~~

Skylight Details & Measurements

A	Exterior Dome	Clear polycarbonate, 0.118-in thickness
C	Interior Dome	White prismatic polycarbonate, 0.118-in thickness
D	Frame Finish	Mill Finish
E	Inside Curb Dimensions	59 3/8 in x 71 3/8 in
F	Outside Skylight Dimensions	65 in x 77 in
G	Maximum Skylight Clearance	63 5/8 in x 75 5/8 in
H	Outside Curb Dimensions	62 3/8 in x 74 3/8 in
I	Roof Pitch	0-60 Degrees

Skylight Testing & Certification

OSHA Fall Protection Testing: This skylight model tested to support maximum concentrated static loads up to 939 lbs.
Air/Water/Structural Certification
Thermal (NFRC) Certification
Factory Mutual (FM)

Quote # VSB-BJ9PGN Rev 1

Job Name

Line # on cover 1

Material # CD2_5060_3P1C2S

PRRF20221329

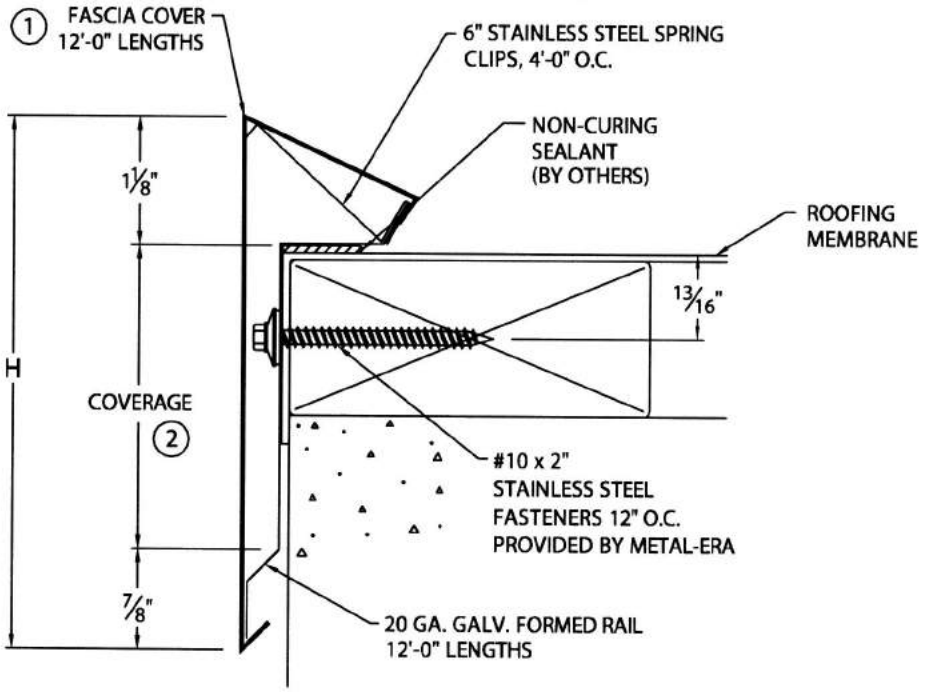
FM APPROVED 1-225

ONE EDGE

FULLY ADHERED OR MECHANICALLY ATTACHED SINGLE-PLY VERSION

ANSI/SPRI ES-1 DESIGN PRESSURE OF 200 psf — 24 GA. AND .040" COVER MATERIAL

U.S. Patent # 5,927,023



EXPRESS 1 DAY LEAD TIME AVAILABLE FOR 24 GAUGE STEEL AND 0.040 ALUMINUM IN THE FOLLOWING COLORS: (WHEN MITERS NOT ORDERED)

- ALMOND
- BONE WHITE
- CITYSCAPE
- CLEAR ANODIZED
- ROMAN BRONZE
- SANDSTONE
- SIERRA TAN
- SHERWOOD GREEN
- COLONIAL RED
- DARK BRONZE
- MANSARD BROWN
- MILL FINISH
- SILVER METALLIC
- SLATE GRAY
- STONE WHITE

FASCIA DIMENSIONS

PRODUCT ID. NO.	H DIM	COVERAGE
☐ ESE-S40	4"	2"
☐ ESE-S50	5"	3"
☒ ESE-S65	6 1/2"	4 1/2"
☐ ESE-S80	8"	6"

Fabrication will proceed only after receipt of signed print approval.

Print Approval:

Architect and/or contractor shall verify all dimensions, sizes and quantities. All products to be installed in strict accordance with Metal-Era's printed instructions.

Approved by: _____

Date: _____

NOTES:

① FASCIA COVER PROVIDED WITH 1" LAP JOINT

② TYPICALLY COVERAGE SHOULD EXTEND A MIN. OF 1" BELOW WOOD BLOCKING IF APPLICABLE.

MATERIAL:

☒ 24 Ga. Galvanized Steel
☐ .040" Aluminum
☐ Other _____

Color: _____

Finish: _____

QUANTITIES:

_____ Lineal Feet 12'-0" (3.65 m) Lengths

_____ Outside Miters (Cover Only) @ (90° °)

_____ Inside Miters (Cover Only) @ (90° °)

For Non-90° Miters, See Print Approval #11010-1103

PROJECT: Walmart

ARCHITECT:

ROOFING CONTRACTOR: Clifford Lee & Associates

REPRESENTATIVE/DISTRIBUTOR:

Corporate Offices, Manufacturing
1600 Airport Road; Waukesha, WI 53188
Phone: 800-558-2162
Fax: 800-373-9156
www.metalera.com

METAL-ERA® Roof Edge Solutions

PRRF20221329

DATE: 09/22/15 | SHT.# ___ OF ___

DRN BY: JJC

CKD BY: SAK | DWG# 24010-19576 | E

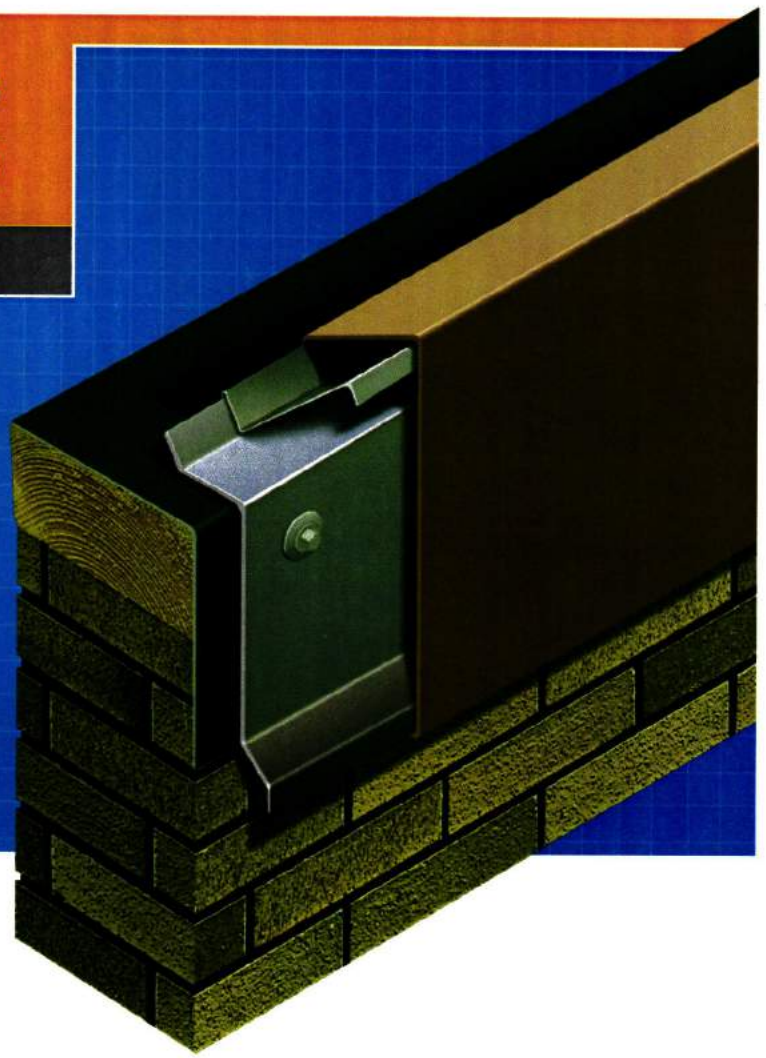
ENGINEERED ROOF SOLUTIONS

METAL-ERA®
Edge Systems One

Edge Systems ONE

ECONOMICAL | FAST | TESTED

One Edge



A High Performance System at an **Economical Price**

We developed the Edge Systems One line with the contractor in mind. Combining a highly engineered and tested product with quick-to-ship convenience and economical pricing, Edge Systems One will simplify your projects – and maximize your profits.

Edge Systems One can be a more cost-effective solution than fabricating in your own shop. Our fast lead times and easy installation translate directly into decreased labor costs and enable you and your team to move on to other projects more quickly.

Try Edge Systems One's quick-to-ship products and see how Metal-Era can help to deliver your project

ON TIME AND ON BUDGET.

High Quality

- Carefully designed and ANSI/SPRI ES-1 tested to comply with the International Building Code
- Available in 15 popular Express Colors or custom finishes with a 30-year warranty
- Up to a 10 year 72 mph performance warranty available
- Available in Fully Adhered, Mechanically Attached or Stone Ballast Single Ply Versions, and Built-up or Modified Versions.

Economical

- Lower price than other customized solutions
- Decreased labor costs due to easy installation
- Higher overall profit on your construction projects

Easy Installation

- Manufactured in 12' lengths, saving 20% - 40% in material handling when compared to 10' or 8' material
- No need for stripping-in or heat welding that are typical with other systems
- Simple snap-on covers with no crimping necessary

SPEED PROTECTION EXPERTISE QUALITY
SPEQ PROMISE

With Metal-Era's SPEQ promise of speed, protection, expertise and quality, you are assured that Edge Systems One is backed with quality and service guarantees.

800-558-2162
www.metalera.com

PRRF20221329

Edge Systems ONE

ECONOMICAL | FAST | TESTED

One Edge

METAL-ERA
Edge Systems One
800-558-2162
www.metalera.com
1600 Airport Road, Waukesha WI 53188
f: 800-373-9156 · info@metalera.com

Quick Shipping in 15 Express Colors

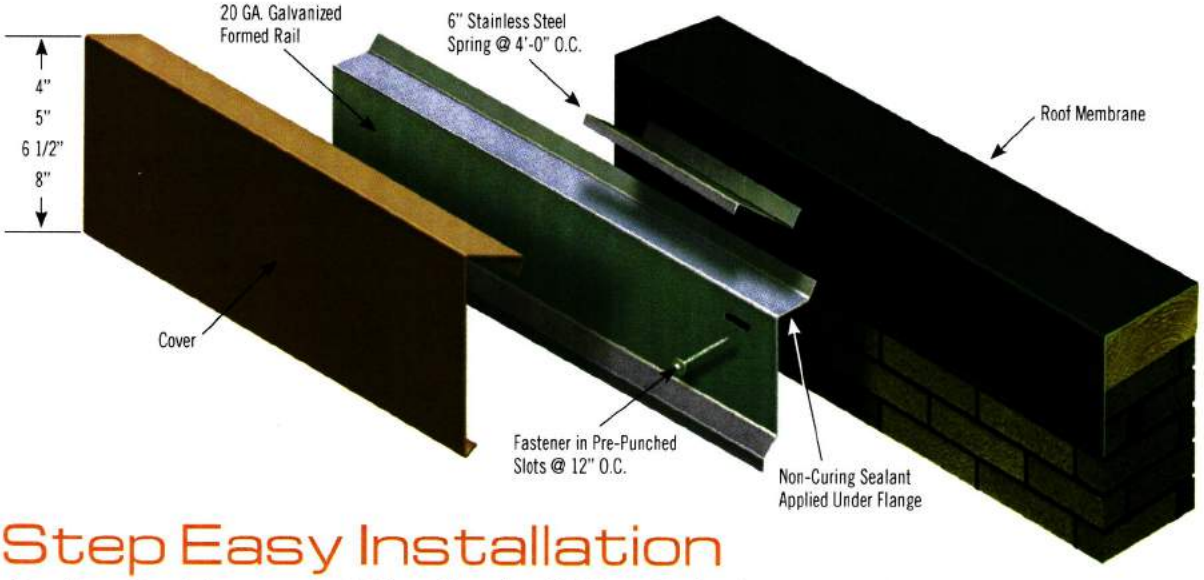
Standard and custom finishes are also available to meet your needs. Our finishes are made of Valspar's Fluropon® high performance Hylar 5000®/Kynar 500® finish and include a 30-year warranty. For the most accurate color representation, contact us to request a paint chip.

Call us at 800-558-2162 for lead times on your next project.

ANSI SPRI ES-1 Tested

Silver Metallic | Bone White | Sierra Tan | Forest (Sherwood) Green | Stone White | Slate Gray | Colonial Red

Sandstone | Dark Bronze | Clear Anodized | Cityscape | Mansard Brown | Mill Finish | Medium (Roman) Bronze | Almond

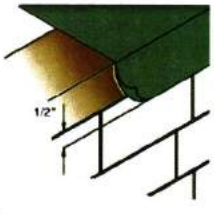


5-Step Easy Installation

Watch the video at metalera.com/es1videos. Download full installation instructions at www.EdgeSystemsOne.com.

Step 1

Place membrane over roof edge, fully covering nailer

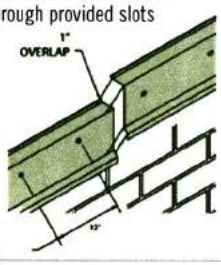


Step 2

Apply sealant to rail (rail shown with inside face up)

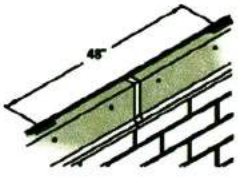
Step 3

Fasten base rail to nailer through provided slots



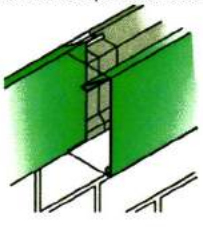
Step 4

Place spring clips every 4' o.c., typical



Step 5

Remove protective film from cover then snap onto base rail



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U.S. PATENT 2,927,023

PRRF20221329

G U I D E - S P E C

Sure-Weld® TPO MECHANICALLY FASTENED ROOFING SYSTEM

January 2021

This **GUIDE-SPEC** is a brief outline of Carlisle's Sure-Weld Mechanically Fastened Roofing System requirements and is intended for use as a submittal with a bid package. Specifiers and the Carlisle Authorized Roofing Applicator must comply with the applicable sections of Carlisle's Technical Manual prior to design or bid.

PART I GENERAL
1.01 DESCRIPTION

The **Sure-Weld Mechanically Fastened Roofing System** incorporates 12', 10' or 8' wide, white, tan or gray in 45, 60 or 80-mil thick scrim-reinforced, Sure-Weld Thermoplastic Polyolefin (TPO) membrane field sheets (also available in special colors in 60-mil thick, maximum 10' wide sheets). The Spectro-Weld™ Mechanically Fastened Roofing System incorporates 10' or 6' wide, white, 60 or 80-mil thick scrim-reinforced Thermoplastic Polyolefin (TPO) membrane field sheets. Insulation is mechanically fastened to an acceptable roof deck. Sure-Weld perimeter sheets (6' used with 10' and 12' wide field sheets; 4' used with 8' wide field sheets) are installed along building edges and field membrane sheets are mechanically fastened to the roof deck with the appropriate Carlisle fasteners and fastening plates. Adjoining sheets of Sure-Weld membrane are overlapped and joined together with a minimum 1-1/2" wide heat weld. Refer to the Thermoplastic Specification for the required number of perimeter membrane sheets and the required fastener spacing.

1.02 QUALITY ASSURANCE

A. This roofing system must be installed by a Carlisle Authorized Roofing Applicator in compliance with shop drawings as approved by Carlisle.

B. Upon request, an inspection shall be conducted by a Field Service Representative of Carlisle to ascertain that the membrane roofing system has been installed according to Carlisle's published specifications and details applicable at the time of bid. This inspection is to determine whether a warranty shall be issued. It is not intended as a final inspection for the benefit of the owner.

C. For specific code approvals achieved with this system, refer to Carlisle's Sure-Weld Code Approval Guide, DORA (Directory of Roof Assemblies), FM Approvals or UL Fire Resistance Directory for Roofing Materials and System.

1.03 SUBMITTALS

A. To ensure compliance with Carlisle's warranty requirements, the following projects should be forwarded to Carlisle for review prior to installation, preferably prior to bid.

1. Air pressurized buildings, canopies, and buildings with large openings, cold storage buildings or freezer facilities, adhered roofing system projects over 100' in height or projects where the membrane is expected to come in direct contact with petroleum-based products, waste products (i.e., grease, oil, animal fats, etc.) and other chemicals.

B. Shop drawings must be submitted to Carlisle by the Carlisle Authorized Roofing Applicator along with a completely executed Notice of Award (Page 1 of Carlisle's Request For Warranty form) for approval. Approved shop drawings are required for inspection of the roof and on projects where on-site technical assistance is requested.

1.04 GENERAL DESIGN CONSIDERATIONS

A. It is the responsibility of the building owner or his/her designated representative to verify structural load limitation. In addition, a core cut may be taken to verify weight of existing components when the roofing system is to be specified on an existing facility.

B. On new construction projects, especially in cold climate regions, moisture generated due to the construction process could adversely impact various components within the roofing assembly if not addressed. [Refer to Spec Supplement G-01-18 "Construction Generated Moisture" included in the Carlisle Technical Manual.]

C. On structural concrete decks, when a vapor retarder is not used, gaps in the deck along the perimeter and around penetrations must be sealed along with vertical joints between tilt-up panels, if present, to prevent infiltration of hot humid air and possible moisture contamination resulting from condensation. This is

specifically important when adhesive is used to attach the roof insulation.

CAUTION: If left unaddressed, collected moisture could weaken insulation boards and facers resulting in a blow-off or increase the probability of mold growth.

D. Vapor Retarders

1. Carlisle does not require a vapor retarder for the protection of the membrane; however, it should be considered by the specifier for the protection of the roofing assembly (i.e. primarily insulation, underlayment and adhesives). The following criteria should be considered by the specifier:

   a. Use of a vapor retarder to protect insulation and reduce moisture accumulation within an insulated roofing assembly, should be investigated by the specifier.

   b. In the generally temperate climate of the United States, during the winter months, water vapor flows upward from a heated, more humid **interior toward** a colder, drier exterior. Vapor retarders are more commonly required in northern climates than in southern regions, where downward vapor pressure may be expected and the roofing membrane itself becomes the vapor retarder.

1.05 WARRANTY

Table I **Mechanically Fastened Membrane Systems Warranty Options**

Years	Thermoplastic Membranes (Sure-Weld TPO)				
	55, 72, 80 or 90 mph	100 mph	110 to 120 mph	Minimum Membrane Thickness (5)	Additional Puncture Coverage (2)
	Mech. Fastened	Mech. Fastened	Mech. Fastened		
5,10, or 15 year	√	N/A(1)	N/A	Sure-Weld 45-mil	Not Available - 80-mil Membrane Required
20 year	√	N/A	N/A	Sure-Weld 60-mil (3)	Not Available - 80-mil Membrane Required
25 year (6)	√	N/A	N/A	Sure-Weld 80-mil (4)	Available – See Below
30 year (6)	√	N/A	N/A	Sure-Weld 80-mil (4)	Available – See Below

Notes: N/A = Not Acceptable √= Acceptable

(1) Contact Carlisle for specific requirements.
(2) Limits of Hail/Puncture Coverage to be defined by other Tables.
(3) Spectro-Weld TPO 60-mil membranes may be used in lieu of Sure-Weld 60-mil membrane.
(4) Spectro-Weld TPO 80-mil membrane can be used in lieu of Sure-Weld 80-mil membrane. Sure-Weld 80-mil TPO in Special Colors are limited to Warranties Up to 20 Year.
(5) All "T-Joints" must be overlaid with appropriate flashing material when using 60 or 80-mil membrane.
(6) Enhancements may be required for certain flashing details. Published details must be referenced for applicable requirements.

Sure-Weld TPO Membrane

Hail
- 1" Dia. Hail Coverage requires a minimum of 60-mil TPO Adhered to cover board.
- 2" Dia. Hail Coverage requires 80-mil TPO Adhered to cover board.

Additional Design Requirement:
- Cover board (SecurShield HD, SecurShield HD Plus, SecurShield HD or StormBase Composite, DensDeck Prime, or Securock – Adhered Only).

Puncture
- Minimum 80-mil TPO Adhered or Mechanically Fastened.

1.06 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver materials to the job site in the original, unopened containers labeled with the manufacturer's name, brand name and installation instructions.

B. Store Sure-Weld membrane in the original undisturbed plastic wrap.

C. Job site storage temperatures in excess of 90°F may affect shelf life of curable materials (i.e., adhesives and sealants).

D. When liquid adhesives and sealants are exposed to lower temperatures, restore to a minimum of 60°F before use.

E. Do not store adhesive containers with opened lids due to the loss of solvent, which will occur from flash off.

1.07 JOB CONDITIONS

A. Refer to Carlisle Technical Manual for applicable project specific Job Conditions.

PART II PRODUCTS

2.01 GENERAL

The components of this roofing system are to be products of Carlisle or accepted by Carlisle as compatible. The installation, performance or integrity of products by others, **when selected by the specifier and accepted by Carlisle,** is not the responsibility of Carlisle and is expressly disclaimed by the Carlisle Warranty.

2.02 MEMBRANE

Sure-Weld white, gray or tan 45, 60, 80-mil thick reinforced Thermoplastic Polyolefin (TPO) membrane is used for this system. Field membrane sheets are 12', 10' or 8' wide by 100' long based on project conditions. Perimeter sheets are 6' wide (used with 12' or 10' field sheets), or 4' wide (used with 8' field sheets).

2.03 RELATED MATERIALS

Sure-Weld Non-Reinforced or Reinforced Flashing, Bonding Adhesive, Cut Edge Sealant, Water Cut-Off Mastic, Weathered Membrane Cleaner, Molded Pocket Sealant, Heat Weldable Walkway Pads, Pre-Molded Inside/Outside Corners, Pipe Flashings, Curb Wraps, LIQUISEAL Liquid Flashing and Sealant Pockets.

PART III EXECUTION

3.01 GENERAL

A. When feasible, begin the application at the highest point of the highest roof level and work to the lowest point to prevent moisture infiltration and to minimize construction traffic on completed sections. This will include completion of all flashings, terminations and daily seals.

3.02 ROOF DECK CRITERIA

A. Proper substrate shall be provided by the building owner. The structure shall be sufficient to withstand normal construction loads and live loads.

B. Defects in the roof deck must be reported and documented to the specifier, general contractor and building owner for assessment. The Carlisle Authorized Applicator shall not proceed with installation unless defects are corrected.

C. Refer to Carlisle Technical Manual for acceptable decks and the applicable Sure-Seal Fasteners (when mechanical attachment of insulation is specified.

3.03 SUBSTRATE PREPARATION

A. On retrofit-recover projects, cut and remove wet insulation, as identified by specifier, and fill all voids with new insulation so it is relatively flush with existing surface.

B. For all projects, substrate must be even without noticeable high spots or depressions, and must be free of accumulated water, ice or snow.

C. Clear the substrate of debris and foreign material. Fresh bitumen based roof cement must be removed or concealed.

3.04 INSTALLATION

Refer to the applicable Safety Data Sheets and Technical Data Bulletins for applicable cautions and warnings.

A. **Insulation Attachment**

1. Carlisle Flexible FAST Adhesive may be specified for insulation securement in full spray or beads with spacing as outlined in the Carlisle Technical Manual.

2. Carlisle Fasteners may be used, when specified, to secure Carlisle Insulation at the specified density outlined in the Carlisle Technical Manual.

B. **Membrane Placement, Attachment and Hot Air Welding**

1. A minimum of one perimeter sheet shall be installed at edges of each roof level and 12', 10' or 8' wide membrane shall be installed in the field of the roof.

2. Membrane sheets shall be mechanically fastened with the appropriate Carlisle Fastener/Fastening Plate spaced 6" to 12" on center, depending on project criteria, within the membrane splice. Refer to the Thermoplastic Specification for required number of perimeter membrane sheets and fastener spacing.
3. Overlap adjacent membrane sheets approximately 5-1/2" at those locations where Fastening Plates are located (along length of the membrane) and a minimum of 2" at end roll sections (width of the membrane).

4. Hot air weld the membrane sheets a minimum of 1-1/2" with an Automatic Hot Air Welding Machine.

5. Membrane that has been exposed to the elements for approximately 7 days must be prepared with Weathered Membrane Cleaner. Wipe the surface where Weathered Membrane Cleaner has been applied with a clean, dry HP Splice Wipe or other white rag to remove cleaner residue prior to hot air welding.

C. **Additional Membrane Securement**

The membrane must be secured at the perimeter of each roof level, roof section, expansion joint, curb, skylight, interior wall, penthouse, etc., at any angle change which exceeds 2" in one horizontal foot and at all other penetrations in accordance with Carlisle's Details published with Carlisle's Specifications.

D. **Membrane Flashing**

1. Flash all walls and curbs with Sure-Weld reinforced membrane. Non-Reinforced membrane shall be limited to inside and outside corners, field fabricated pipe seals, scuppers and Sealant Pockets where the use of pre-molded accessories are not practical.

2. On vertical surfaces, such as walls, curbs and pipes, Bonding Adhesive is not required when the flashing height is 12" or less and the membrane is terminated under a metal counterflashing (nailed). When a coping or termination bar is used for vertical terminations, Bonding Adhesive may be eliminated for flashing heights 18" or less.

3. Terminate the flashing in accordance with an appropriate Carlisle Details above anticipated slush line.

4. When using the Pressure-Sensitive Cover Strip to overlay metal edging flanges or fasteners/plates, Carlisle Weathered Membrane Cleaner is used to clean surfaces as needed. Apply Carlisle HP-250 Primer prior to applying Pressure-Sensitive Cover Strip.

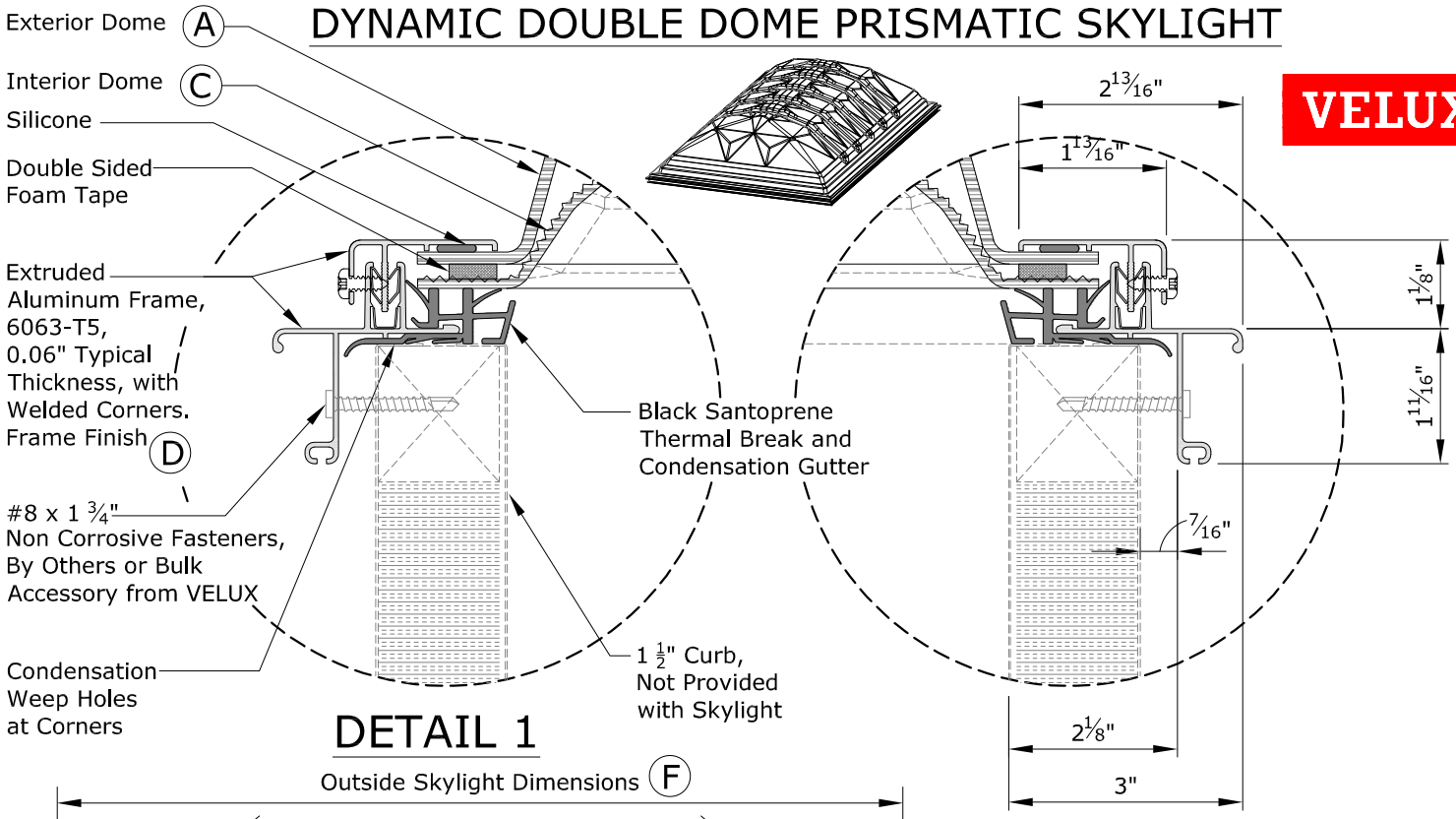
Carlisle SynTec
P. O. Box 7000, Carlisle, PA 17013-0295
Phone: 800-479-6832
http://www.carlisle-syntec.com

Physical properties of Sure-Weld Membrane can be referenced in Part II, "Products" of the Thermoplastic Specification.

Attach copies of the applicable Carlisle Details that pertain to the individual project to complete a bid package submittal.

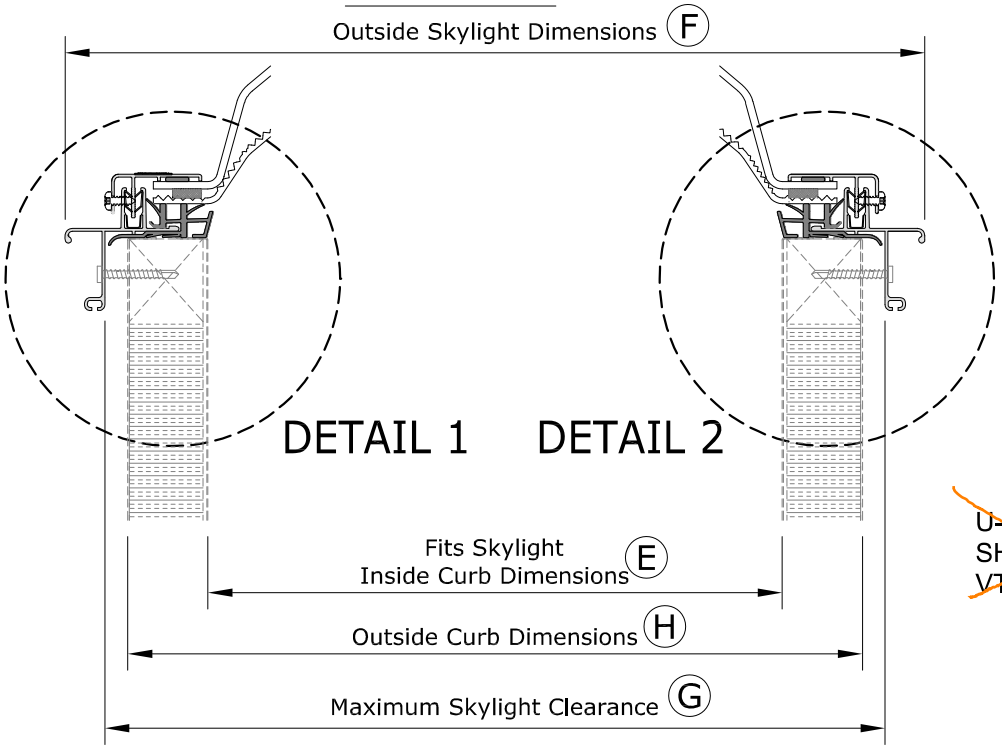
DYNAMIC DOUBLE DOME PRISMATIC SKYLIGHT

VELUX



DETAIL 1

DETAIL 2



DETAIL 1 DETAIL 2

~~U-Factor: .71~~
~~SHGC: .46~~
~~VT: .619~~

Skylight Details & Measurements

Ⓐ Exterior Dome	Clear polycarbonate, 0.118-in thickness	
Ⓒ Interior Dome	White prismatic polycarbonate, 0.118-in thickness	
Ⓓ Frame Finish	Mill Finish	
Ⓔ Inside Curb Dimensions		59 3/8 in x 71 3/8 in
Ⓕ Outside Skylight Dimensions		65 in x 77 in
Ⓖ Maximum Skylight Clearance		63 5/8 in x 75 5/8 in
Ⓗ Outside Curb Dimensions		62 3/8 in x 74 3/8 in
Ⓘ Roof Pitch		0-60 Degrees

Quote # VJF-C6NS2M Rev 1

Job Name WALMART #1416

Line # on cover 1

Material # CD2_5060_3P1C2S

Skylight Testing & Certification

OSHA Fall Protection Testing: This skylight model tested to support maximum concentrated static loads up to 1215 lbs and dynamic load tested with 400 lbs load dropped from a height of 6 ft.
Air/Water/Structural Certification
Thermal (NFRC) Certification
Factory Mutual (FM)

PRRF20221329

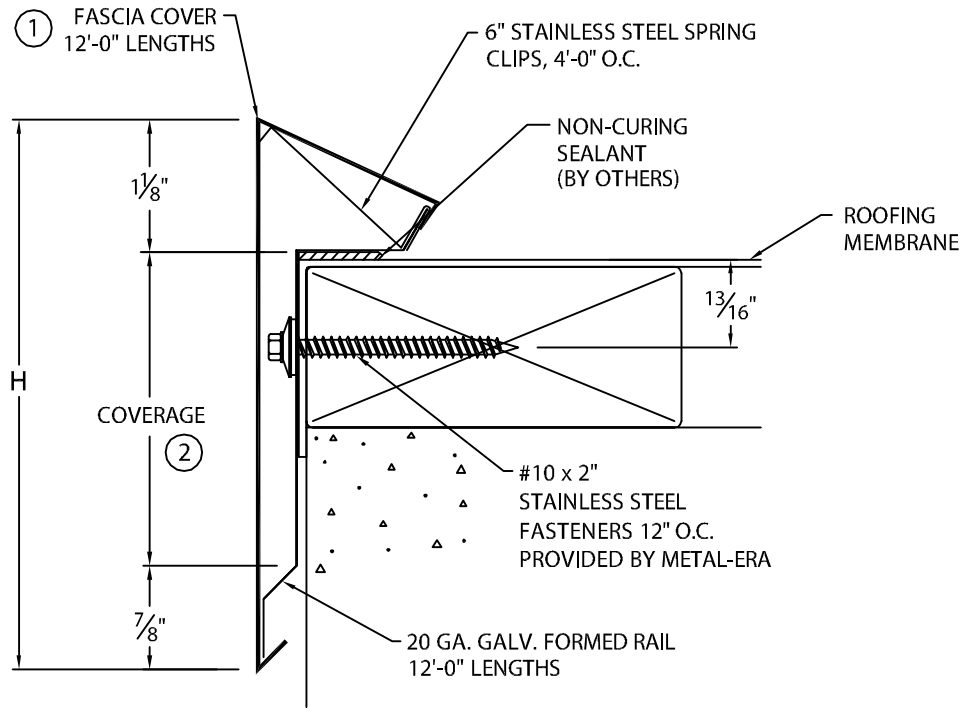
FM APPROVED 1-225

ONE EDGE

FULLY ADHERED OR MECHANICALLY ATTACHED SINGLE-PLY VERSION

ANSI/SPRI ES-1 DESIGN PRESSURE OF 200 psf — 24 GA. AND .040" COVER MATERIAL

U.S. Patent # 5,927,023



EXPRESS 1 DAY LEAD TIME AVAILABLE FOR 24 GAUGE STEEL AND 0.040 ALUMINUM IN THE FOLLOWING COLORS: (WHEN MITERS NOT ORDERED)

- ALMOND
- BONE WHITE
- CITYSCAPE
- CLEAR ANODIZED
- ROMAN BRONZE
- SANDSTONE
- SIERRA TAN
- SHERWOOD GREEN
- COLONIAL RED
- DARK BRONZE
- MANSARD BROWN
- MILL FINISH
- SILVER METALLIC
- SLATE GRAY
- STONE WHITE

FASCIA DIMENSIONS

PRODUCT ID. NO.	H DIM	COVERAGE
☐ ESE-S40	4"	2"
☐ ESE-S50	5"	3"
☒ ESE-S65	6 1/2"	4 1/2"
☐ ESE-S80	8"	6"

Fabrication will proceed only after receipt of signed print approval.

Print Approval:

Architect and/or contractor shall verify all dimensions, sizes and quantities. All products to be installed in strict accordance with Metal-Era's printed instructions.

Approved by: _____

Date: _____

NOTES:

1. FASCIA COVER PROVIDED WITH 1" LAP JOINT
2. TYPICALLY COVERAGE SHOULD EXTEND A MIN. OF 1" BELOW WOOD BLOCKING IF APPLICABLE.

MATERIAL:

☒ 24 Ga. Galvanized Steel
☐ .040" Aluminum
☐ Other _____

Color: Stone White

Finish: _____

QUANTITIES:

1,900 Lineal Feet 12'-0" (3.65 m) Lengths

_____ Outside Miters (Cover Only) @ (90°)

_____ Inside Miters (Cover Only) @ (90°)

For Non-90° Miters, See Print Approval #11010-1103

PROJECT: Walmart

ARCHITECT:

ROOFING CONTRACTOR: Clifford Lee & Associates Inc.

REPRESENTATIVE/DISTRIBUTOR:

Corporate Offices, Manufacturing
1600 Airport Road; Waukesha, WI 53188
Phone: 800-558-2162
Fax: 800-373-9156
www.metalera.com

METAL-ERA® Roof Edge Solutions

PRRF20221329

DATE: 09/22/15
DRN BY: JJC
CKD BY: SAK

SHT.#___ OF ___

DWG# 24010-19576 E

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
Sure-Weld TPO Bonding Adhesive

Synonyms
Contact Adhesive

Chemical Family
Adhesive

Product Use
Contact Adhesive for TPO Single-ply roofing.

Restrictions on Use
For industrial use only.

Manufacturer Information

Carlisle SynTec
1285 Ritner Highway
Carlisle, PA 17013 USA
Phone: +1-800-479-6832
Emergency Phone #: +1-800-424-9300 (Chemtrec)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Flammable Liquids - Category 2
Aspiration Hazard - Category 1
Skin Corrosion/Irritation - Category 2
Serious Eye Damage/Eye Irritation - Category 2A
Skin Sensitization - Category 1A
Carcinogenicity - Category 2
Reproductive Toxicity - Category 1B
Specific Target Organ Toxicity - Single Exposure - Category 1 (central nervous system, kidneys, liver, respiratory system)
Specific Target Organ Toxicity - Single Exposure - Category 3
Specific Target Organ Toxicity - Repeated Exposure - Category 1 (central nervous system,respiratory system)
Specific Target Organ Toxicity - Repeated Exposure - Category 2 (blood,liver)

GHS Label Elements

Symbol(s)

Signal Word
Danger

Hazard Statement(s)
Highly flammable liquid and vapor
May be fatal if swallowed and enters airways
Causes skin irritation
Causes serious eye irritation
May cause allergic skin reaction
Suspected of causing cancer
May damage fertility or the unborn child
Causes damage to organs
May cause drowsiness or dizziness
Causes damage to organs through prolonged or repeated exposure
May cause damage to organs through prolonged or repeated exposure

Precautionary Statement(s)

Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Keep container tightly closed
Keep away from heat/sparks/open flame/hot surfaces - No smoking
Ground/Bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Take precautionary measures against static discharge
Use only non-sparking tools
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapours/spray
Wash thoroughly after handling
Contaminated work clothing must not be allowed out of the workplace
Do not eat, drink or smoke when using this product

Response
In case of fire: Use appropriate media to extinguish
If exposed: Call a POISON CENTER or doctor/physician
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention

IF SWALLOWED: Immediately call a POISON CENTER/doctor
Do NOT induce vomiting
Specific treatment (see label)

Storage
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
Mixture	Polychloroprene	7-13
Mixture	Styrene butadiene polymer	0.5-1.5
Mixture	Chlorinated polypropylene	0.1-1
Trade Secret	Polyphenol antioxidant	0.1-1
1309-48-4	Magnesium oxide	0.1-1
1314-13-2	Zinc oxide	0.1-1
Trade Secret	Heat reactive phenolic resin	1-5
108-88-3	Toluene	15-40
64742-89-8	Solvent naphtha, petroleum, light aliphatic	10-30
67-64-1	Acetone	5-10
1330-20-7	Xylene	0.5-1.5
100-41-4	Ethylbenzene	0.1-1

Section 4 - FIRST AID MEASURES

Description of Necessary Measures
If exposed or concerned: Call a POISON CENTER or doctor/physician.

Inhalation

Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

Skin
Remove contaminated clothing and wash it before reuse. Rinse skin with water/shower. If skin irritation or rash occurs, seek medical advice/attention.

Eyes
Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

Indication of any immediate medical attention and special treatment needed
Treat symptomatically and supportively.

Most Important Symptoms/Effects

Acute
May be fatal if swallowed and enters airways. Causes skin irritation. Causes serious eye irritation. May cause allergic skin reaction. Causes damage to central nervous system, kidneys, liver, and respiratory system. May cause drowsiness or dizziness.

Delayed
Suspected of causing cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure: central nervous system, respiratory system, blood, liver.

Note to Physicians
Contains: toluene, heptane.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media
Dry chemical, foam or carbon dioxide. Water may be ineffective.

Unsuitable Extinguishing Media
Do not use high-pressure water streams.

Special Hazards Arising from the Chemical
Highly flammable liquid and vapor. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flashback.

Hazardous Combustion Products
Oxides of carbon, oxides of nitrogen

Advice for firefighters
Keep away from heat/sparks/open flame/hot surfaces - No smoking. Ground/bond container and receiving equipment. Take action to prevent static discharges.

Fire Fighting Measures
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up
Remove all sources of ignition. Avoid breathing vapors. Ventilate affected area. Absorb with earth, sand or other non-combustible material and transfer to container. Dike for later disposal. Dispose in accordance with all applicable regulations.

Environmental Precautions
Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep container tightly closed. Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Ground/bond container and receiving equipment. Use explosion-proof equipment. Take precautionary measures against static discharge. Use non-sparking tools. Use only outdoors or in a well-ventilated area. Vapors will travel. Prevent vapors from entering buildings through open windows or ventilation systems. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage, Including any Incompatibilities
Store in a well-ventilated place. Keep container tightly closed
Keep cool. Store locked up .Keep away from heat and ignition sources. Do not cut, puncture, or weld on or near this container. Empty containers may contain product residue.

Incompatible Materials
Acids, bases, strong oxidizing agents

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Styrene butadiene polymer	Mixture
NIOSH:	10 mg/m^3 TWA total dust; 5 mg/m^3 TWA respirable dust

OSHA (US):	15 mg/m^3 TWA total dust; 5 mg/m^3 TWA respirable fraction	
Mexico:	10 mg/m^3 TWA LMPE-PPT	20 mg/m^3 STEL [LMPE-CT]
Magnesium oxide	1309-48-4	
ACGIH:	10 mg/m^3 TWA inhalable fraction	
NIOSH:	750 mg/m^3 IDLH fume	
OSHA (US):	15 mg/m^3 TWA fume, total particulate	
Mexico:	10 mg/m^3 TWA LMPE-PPT as Mg fume	
Zinc oxide	1314-13-2	
ACGIH:	2 mg/m^3 TWA respirable fraction	10 mg/m^3 STEL respirable fraction
NIOSH:	5 mg/m^3 TWA dust and fume	10 mg/m^3 STEL fume
	15 mg/m^3 Ceiling dust	500 mg/m^3 IDLH
OSHA (US):	5 mg/m^3 TWA fume; 15 mg/m3 TWA total dust; 5 mg/m^3 TWA respirable fraction	
Mexico:	5 mg/m^3 TWA LMPE-PPT fume; 10 mg/m^3 TWA LMPE-PPT dust	
	10 mg/m^3 STEL [LMPE-CT] fume	
Toluene	108-88-3	
ACGIH:	20 ppm TWA	
NIOSH:	100 ppm TWA; 375 mg/m^3 TWA	150 ppm STEL; 560 mg/m^3 STEL
	500 ppm IDLH	
Europe:	50 ppm TWA; 192 mg/m^3 TWA	100 ppm STEL; 384 mg/m^3 STEL
	Possibility of significant uptake through the skin	
OSHA (US):	200 ppm TWA	300 ppm Ceiling
Mexico:	50 ppm TWA LMPE-PPT; 188 mg/m^3 TWA LMPE-PPT	
	Skin - potential for cutaneous absorption	

Acetone	67-64-1	
ACGIH:	250 ppm TWA	500 ppm STEL
NIOSH:	250 ppm TWA; 590 mg/m^3 TWA	2500 ppm IDLH (10% LEL)
Europe:	500 ppm TWA; 1210 mg/m^3 TWA	
OSHA (US):	1000 ppm TWA; 2400 mg/m^3 TWA	
Mexico:	1000 ppm TWA LMPE-PPT; 2400 mg/m^3 TWA LMPE-PPT	
	1260 ppm STEL [LMPE-CT]; 3000 mg/m^3 STEL [LMPE-CT]	
Xylene	1330-20-7	
ACGIH:	100 ppm TWA	150 ppm STEL
Europe:	50 ppm TWA (pure); 221 mg/m^3 TWA (pure)	100 ppm STEL (pure); 442 mg/m^3 STEL (pure)
	Possibility of significant uptake through the skin	
OSHA (US):	100 ppm TWA; 435 mg/m^3 TWA	
Mexico:	100 ppm TWA LMPE-PPT; 435 mg/m^3 TWA LMPE-PPT	
	150 ppm STEL [LMPE-CT]; 655 mg/m^3 STEL [LMPE-CT]	
Ethylbenzene	100-41-4	
ACGIH:	20 ppm TWA	
NIOSH:	100 ppm TWA; 435 mg/m^3 TWA	125 ppm STEL; 545 mg/m^3 STEL
	800 ppm IDLH (10% LEL)	
Europe:	100 ppm TWA; 442 mg/m^3 TWA	200 ppm STEL; 884 mg/m^3 STEL
	Possibility of significant uptake through the skin	
OSHA (US):	100 ppm TWA; 435 mg/m^3 TWA	
Mexico:	100 ppm TWA LMPE-PPT; 435 mg/m^3 TWA LMPE-PPT	
	125 ppm STEL [LMPE-CT]; 545 mg/m^3 STEL [LMPE-CT]	

Biological limit value

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear chemical safety goggles with a faceshield to protect against skin and eye contact when appropriate.

Skin Protection

Wear work clothes with long sleeves. Wear protective shoes.

Respiratory Protection

A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	yellowish liquid	**Physical State**	liquid
Odor	hydrocarbon	**Color**	yellowish
Odor Threshold	Not available	**pH**	Not available
Melting Point	-95 - -47 °C (-139--53 °F)	**Boiling Point**	56 - 137 °C (133-279 °F)
Freezing point	Not available	**Evaporation Rate**	3.2
Boiling Point Range	Not available	**Flammability (solid, gas)**	Not available
Autoignition	230 °C (475 °F)	**Flash Point**	-20 °C (-4 °F)
Lower Explosive Limit	1 %	**Decomposition**	Not available
Upper Explosive Limit	12.8 %	**Vapor Pressure**	54.1 mmHg
Vapor Density (air=1)	3.2	**Specific Gravity (water=1)**	Not available
Water Solubility	Negligible	**Partition coefficient: n-octanol/water**	Not available
Viscosity	2500 cps	**Solubility (Other)**	Hydrocarbons
Density	0.849 (relative)	**VOC**	670 g/L

Other Information

No additional information available.

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.

Chemical Stability
Stable under normal conditions of use.

Possibility of Hazardous Reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials
Acids, bases, strong oxidizing agents

Hazardous decomposition products
Oxides of carbon, oxides of nitrogen

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
May cause drowsiness or dizziness. May cause respiratory irritation.

Skin Contact
Causes skin irritation. May cause allergic skin reaction.

Eye Contact
Causes serious eye irritation.

Ingestion
May be fatal if swallowed and enters airways. May cause gastrointestinal irritation.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:
Polychloroprene (Mixture)
Oral LD50 Rat 20000 mg/kg

Styrene butadiene polymer (Mixture)
Oral LD50 Rat 6450 mg/kg

Chlorinated polypropylene (Mixture)
Oral LD50 Rat 5000 mg/kg

Polyphenol antioxidant (Trade Secret)
Oral LD50 Rat >5000 mg/kg
Dermal LD50 Rabbit >5000 mg/kg
Inhalation LC50 Rat >165 mg/L 1 h

Magnesium oxide (1309-48-4)
Oral LD50 Rat >5000 mg/kg

Zinc oxide (1314-13-2)
Oral LD50 Rat >15000 mg/kg
Inhalation LC50 Rat >5.7 mg/L

Toluene (108-88-3)
Oral LD50 Rat >7000 mg/kg
Dermal LD50 Rabbit 12 - 14 g/kg
Inhalation LC50 Rat 30 - 35 mg/L

Solvent naphtha, petroleum, light aliphatic (64742-89-8)
Oral LD50 Rat >2000 mg/kg
Dermal LD50 Rat >2000 mg/kg
Inhalation LC50 Rat >5000 ppm 1 hr

Acetone (67-64-1)
Oral LD50 Rat 5800 mg/kg
Dermal LD50 Guinea pig >7246 mg/kg
Inhalation LC50 Rat 32000 ppm 4 h

Xylene (1330-20-7)
Oral LD50 Rat 4300 mg/kg
Dermal LD50 Rabbit >2000 mg/kg
Inhalation LC50 Rat 29.08 mg/L 4 h

Ethylbenzene (100-41-4)
Oral LD50 Rat 3500 mg/kg
Dermal LD50 Rabbit 15400 mg/kg
Inhalation LC50 Rat 4000 ppm 4 hr

Immediate Effects
May be fatal if swallowed and enters airways. Cause skin irritation. Causes serious eye irritation. May cause allergic skin reaction. Causes damage to central nervous system, kidneys, liver, and respiratory system. May cause drowsiness or dizziness.

Delayed Effects
Suspected of causing cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure: central nervous system, respiratory system, blood, liver.

Irritation/Corrosivity Data
Causes skin irritation. Causes serious eye irritation.

Respiratory Sensitization
No data available.

Dermal Sensitization
May cause allergic skin reaction.

Component Carcinogenicity

Polychloroprene	Mixture
IARC:	Supplement 7 [1987]; Monograph 19 [1979] (Group 3 (not classifiable))
Magnesium oxide	1309-48-4
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
Toluene	108-88-3
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))
Acetone	67-64-1
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
Xylene	1330-20-7
ACGIH:	A4 - Not Classifiable as a Human Carcinogen
IARC:	Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))
Ethylbenzene	100-41-4
ACGIH:	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC:	Monograph 77 [2000] (Group 2B (possibly carcinogenic to humans))
DFG:	Category 4 (no significant contribution to human cancer)
OSHA:	Present

Germ Cell Mutagenicity
No data available.

Reproductive Toxicity
May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure
central nervous system, liver, respiratory system, kidneys

Specific Target Organ Toxicity - Repeated Exposure
central nervous system, liver, respiratory system, blood

Aspiration hazard
May be fatal if swallowed and enters airways.

Medical Conditions Aggravated by Exposure
May cause allergic skin reaction. Aspiration into the lungs may cause chemical pneumonitis.

Additional Data
No additional information available.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity
Avoid release to the environment.

Component Analysis - Aquatic Toxicity

Polyphenol antioxidant	Trade Secret
Fish:	LC50 96 h Oncorhynchus mykiss >0.2 mg/L [semi-static]
Algae:	EC50 72 h Pseudokirchneriella subcapitata >0.2 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna >0.2 mg/L IUCLID
Toluene	108-88-3
Fish:	LC50 96 h Pimephales promelas 15.22 - 19.05 mg/L [flow-through] (1 day old); LC50 96 h Pimephales promelas 12.6 mg/L [static]; LC50 96 h Oncorhynchus mykiss 5.89 - 7.81 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 14.1 - 17.16 mg/L [static]; LC50 96 h Oncorhynchus mykiss 5.8 mg/L [semi-static]; LC50 96 h Lepomis macrochirus 11 - 15 mg/L [static]; LC50 96 h Oryzias latipes 54 mg/L [static]; LC50 96 h Poecilia reticulata 28.2 mg/L [semi-static]; LC50 96 h Poecilia reticulata 50.87 - 70.34 mg/L [static]
Algae:	EC50 96 h Pseudokirchneriella subcapitata >433 mg/L IUCLID; EC50 72 h Pseudokirchneriella subcapitata 12.5 mg/L [static] EPA
Invertebrate:	EC50 48 h Daphnia magna 5.46 - 9.83 mg/L [static] EPA; EC50 48 h Daphnia magna 11.5 mg/L IUCLID
Solvent naphtha, petroleum, light aliphatic	64742-89-8

Algae:	EC50 72 h Pseudokirchneriella subcapitata 4700 mg/L IUCLID
Acetone	67-64-1
Fish:	LC50 96 h Oncorhynchus mykiss 4.74 - 6.33 mL/L; LC50 96 h Pimephales promelas 6210 - 8120 mg/L [static]; LC50 96 h Lepomis macrochirus 8300 mg/L
Invertebrate:	EC50 48 h Daphnia magna 10294 - 17704 mg/L [static] EPA; EC50 48 h Daphnia magna 12600 - 12700 mg/L IUCLID
Xylene	1330-20-7
Fish:	LC50 96 h Pimephales promelas 13.4 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 2.661 - 4.093 mg/L [static]; LC50 96 h Oncorhynchus mykiss 13.5 - 17.3 mg/L; LC50 96 h Lepomis macrochirus 13.1 - 16.5 mg/L [flow-through]; LC50 96 h Lepomis macrochirus 19 mg/L; LC50 96 h Lepomis macrochirus 7.711 - 9.591 mg/L [static]; LC50 96 h Pimephales promelas 23.53 - 29.97 mg/L [static]; LC50 96 h Cyprinus carpio 780 mg/L [semi-static]; LC50 96 h Cyprinus carpio >780 mg/L; LC50 96 h Poecilia reticulata 30.26 - 40.75 mg/L [static]
Invertebrate:	EC50 48 h water flea 3.82 mg/L; LC50 48 h Gammarus lacustris 0.6 mg/L
Ethylbenzene	100-41-4
Fish:	LC50 96 h Oncorhynchus mykiss 11 - 18 mg/L [static]; LC50 96 h Oncorhynchus mykiss 4.2 mg/L [semi-static]; LC50 96 h Pimephales promelas 7.55 - 11 mg/L [flow-through]; LC50 96 h Lepomis macrochirus 32 mg/L [static]; LC50 96 h Pimephales promelas 9.1 - 15.6 mg/L [static]; LC50 96 h Poecilia reticulata 9.6 mg/L [static]
Algae:	EC50 72 h Pseudokirchneriella subcapitata 4.6 mg/L IUCLID; EC50 96 h Pseudokirchneriella subcapitata >438 mg/L IUCLID; EC50 72 h Pseudokirchneriella subcapitata 2.6 - 11.3 mg/L [static] EPA; EC50 96 h Pseudokirchneriella subcapitata 1.7 - 7.6 mg/L [static] EPA
Invertebrate:	EC50 48 h Daphnia magna 1.8 - 2.4 mg/L IUCLID

Persistence and Degradability
No information available for the product.

Bioaccumulative Potential
No information available for the product.

Mobility
No information available for the product.

Other Toxicity
No additional information available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: Adhesives
Hazard Class: 3
UN/NA #: UN1133
Packing Group: II
Required Label(s): 3
Additional information: Special Provisions (172.102): 149, B52, IB2, T4, TP1, TP8

IATA Information:
UN#: UN1133

IMDG Information:
UN#: UN1133

TDG Information:
UN#: UN1133

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations
This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Toluene	108-88-3
SARA 313:	1 % de minimis concentration
CERCLA:	1000 lb final RQ; 454 kg final RQ

Acetone	67-64-1
CERCLA:	5000 lb final RQ; 2270 kg final RQ
Xylene	1330-20-7
SARA 313:	1 % de minimis concentration
CERCLA:	100 lb final RQ; 45.4 kg final RQ
Ethylbenzene	100-41-4
SARA 313:	0.1 % de minimis concentration
CERCLA:	1000 lb final RQ; 454 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C)
Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** No **Reactivity:** No

U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Styrene butadiene polymer	Mixture	No	Yes	Yes	Yes	Yes
Magnesium oxide	1309-48-4	Yes	Yes	Yes	Yes	Yes
Zinc oxide	1314-13-2	Yes	Yes	Yes	Yes	Yes
Toluene	108-88-3	Yes	Yes	Yes	Yes	Yes
Acetone	67-64-1	Yes	Yes	Yes	Yes	Yes
Xylene	1330-20-7	Yes	Yes	Yes	Yes	Yes
Ethylbenzene	100-41-4	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer
WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects

Toluene	108-88-3
Repro/Dev. Tox	developmental toxicity , 1/1/1991
Ethylbenzene	100-41-4
Carc:	carcinogen , 6/11/2004

Canadian WHMIS Ingredient Disclosure List (IDL)
Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in

products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

Magnesium oxide	1309-48-4
	1 %
Zinc oxide	1314-13-2
	1 %
Toluene	108-88-3
	1 %
Acetone	67-64-1
	1 %
Ethylbenzene	100-41-4
	0.1 %

Component Analysis - Inventory

Polychloroprene (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Styrene butadiene polymer (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	NSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Chlorinated polypropylene (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No

Polyphenol antioxidant (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No

Magnesium oxide (1309-48-4)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Zinc oxide (1314-13-2)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Toluene (108-88-3)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Solvent naphtha, petroleum, light aliphatic (64742-89-8)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

Acetone (67-64-1)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Xylene (1330-20-7)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Ethylbenzene (100-41-4)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Yellow dye (2481-94-9)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

HMIS Rating

Health: 2* Fire: 3 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings

Health: 2 Fire: 3 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
Revision Date: June 1, 2018
Revision Note: General Update

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:
The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other

companies. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
Low VOC Bonding Adhesive

Synonyms
Contact Adhesive

Chemical Family
Adhesive

Product Use
Contact Adhesive for TPO/EPDM Single-ply roofing

Restrictions on Use
For industrial use only.

Manufacturer Information

Carlisle SynTec
1285 Ritner Highway
Carlisle, PA 17013 USA
Phone: +1-800-479-6832
Emergency Phone #: +1-800-424-9300 (Chemtrec)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Flammable Liquids - Category 2
Aspiration Hazard - Category 1
Serious Eye Damage/Eye Irritation - Category 2A
Skin Sensitization - Category 1A
Carcinogenicity - Category 2
Specific Target Organ Toxicity - Single Exposure - Category 1 (central nervous system)
Specific Target Organ Toxicity - Single Exposure - Category 3
Specific Target Organ Toxicity - Repeated Exposure - Category 1 (central nervous system)
Specific Target Organ Toxicity - Repeated Exposure - Category 2 (blood)

GHS Label Elements

Symbol(s)

Signal Word
Danger

Hazard Statement(s)
Highly flammable liquid and vapor
May be fatal if swallowed and enters airways
Causes serious eye irritation
May cause allergic skin reaction
Suspected of causing cancer
Causes damage to organs
May cause respiratory irritation. May cause drowsiness or dizziness
Causes damage to organs through prolonged or repeated exposure
May cause damage to organs through prolonged or repeated exposure

Precautionary Statement(s)

Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Keep container tightly closed
Keep away from heat/sparks/open flame/hot surfaces - No smoking
Ground/Bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Take precautionary measures against static discharge
Use only non-sparking tools
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapours/spray
Wash thoroughly after handling
Contaminated work clothing must not be allowed out of the workplace
Do not eat, drink or smoke when using this product

Response
In case of fire: Use appropriate media to extinguish
If exposed: Call a POISON CENTER or doctor/physician
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation or rash occurs: Get medical advice/attention
Wash contaminated clothing before reuse
IF SWALLOWED: Immediately call a POISON CENTER/doctor
Do NOT induce vomiting
Specific treatment (see label)

Storage
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations

Statement of Unknown Toxicity
21.537152% of the mixture consists of ingredient(s) of unknown acute toxicity.

Other Hazards
No additional information available.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
Mixture	Polychloroprene	7-13
Mixture	Chlorinated polypropylene	0.1-1
Trade Secret	Polyphenol antioxidant	0.1-1
1309-48-4	Magnesium oxide	0.1-1
1314-13-2	Zinc oxide	0.1-1
Trade Secret	Heat reactive phenolic resin	1-5
108-88-3	Toluene	3-7
67-64-1	Acetone	1-5
540-88-5	tert-Butyl acetate	30-60
Mixture	Styrene butadiene polymer	0.5-1.5
Mixture	Phenolic resin	0.5-1.5
79-20-9	Methyl acetate	10-30

Section 4 - FIRST AID MEASURES

Description of Necessary Measures
If exposed or concerned: Call a POISON CENTER or doctor/physician.

Inhalation
Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

Skin

Remove contaminated clothing and wash it before reuse. Rinse skin with water/shower. If skin irritation or rash occurs, seek medical advice/attention.

Eyes
Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.

Indication of any immediate medical attention and special treatment needed
Treat symptomatically and supportively.

Most Important Symptoms/Effects

Acute
May be fatal if swallowed and enters airways. Causes serious eye irritation. May cause allergic skin reaction. Causes damage to central nervous system. May cause respiratory irritation. May cause drowsiness or dizziness.

Delayed
Suspected of causing cancer. Causes damage to organs through prolonged or repeated exposure: central nervous system, blood.

Note to Physicians
Contains toluene.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media
Dry chemical, foam or carbon dioxide. Water may be ineffective.

Unsuitable Extinguishing Media
Do not use high-pressure water streams.

Special Hazards Arising from the Chemical
Highly flammable liquid and vapor. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flashback.

Hazardous Combustion Products
Oxides of carbon, oxides of nitrogen

Advice for firefighters
Keep away from heat/sparks/open flame/hot surfaces - No smoking. Ground/bond container and receiving equipment. Take action to prevent static discharges.

Fire Fighting Measures
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up
Remove all sources of ignition. Avoid breathing vapors. Ventilate affected area. Absorb with earth, sand or other non-combustible material and transfer to container. Dike for later disposal. Dispose in accordance with all applicable regulations.

Environmental Precautions
Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep container tightly closed. Keep away from heat, sparks, open flame, and hot surfaces - No smoking. Ground/bond container and receiving equipment. Use explosion-proof equipment. Take precautionary measures against static discharge. Use non-sparking tools. Use only outdoors or in a well-ventilated area. Vapors will travel. Prevent vapors from entering buildings through open windows or ventilation systems. Wear protective gloves/protective clothing/eye protection/face protection. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wash contaminated clothing before reuse. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage, Including any Incompatibilities
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up
Keep away from heat and ignition sources. Do not cut, puncture, or weld on or near this container. Empty containers may contain product residue.

Incompatible Materials
Acids, bases, strong oxidizing agents

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Magnesium oxide	1309-48-4

ACGIH:	10 mg/m^3 TWA inhalable fraction	
NIOSH:	750 mg/m^3 IDLH fume	
OSHA (US):	15 mg/m^3 TWA fume, total particulate	
Mexico:	10 mg/m^3 TWA LMPE-PPT as Mg fume	
Zinc oxide	1314-13-2	
ACGIH:	2 mg/m^3 TWA respirable fraction	10 mg/m^3 STEL respirable fraction
NIOSH:	5 mg/m^3 TWA dust and fume	10 mg/m^3 STEL fume
	15 mg/m^3 Ceiling dust	500 mg/m^3 IDLH
OSHA (US):	5 mg/m^3 TWA fume; 15 mg/m^3 TWA total dust; 5 mg/m^3 TWA respirable fraction	
Mexico:	5 mg/m^3 TWA LMPE-PPT fume; 10 mg/m^3 TWA LMPE-PPT dust	
	10 mg/m^3 STEL [LMPE-CT] fume	
Toluene	108-88-3	
ACGIH:	20 ppm TWA	
NIOSH:	100 ppm TWA; 375 mg/m^3 TWA	150 ppm STEL; 560 mg/m^3 STEL
	500 ppm IDLH	
Europe:	50 ppm TWA; 192 mg/m^3 TWA	100 ppm STEL; 384 mg/m^3 STEL
	Possibility of significant uptake through the skin	
OSHA (US):	200 ppm TWA	300 ppm Ceiling
Mexico:	50 ppm TWA LMPE-PPT; 188 mg/m3 TWA LMPE-PPT	
	Skin - potential for cutaneous absorption	
Acetone	67-64-1	
ACGIH:	250 ppm TWA	500 ppm STEL
NIOSH:	250 ppm TWA; 590 mg/m^3 TWA	2500 ppm IDLH (10% LEL)
Europe:	500 ppm TWA; 1210 mg/m^3 TWA	

OSHA (US):	1000 ppm TWA; 2400 mg/m^3 TWA	
Mexico:	1000 ppm TWA LMPE-PPT; 2400 mg/m^3 TWA LMPE-PPT	
	1260 ppm STEL [LMPE-CT]; 3000 mg/m^3 STEL [LMPE-CT]	
tert-Butyl acetate	540-88-5	
ACGIH:	200 ppm TWA	
NIOSH:	200 ppm TWA; 950 mg/m^3 TWA	1500 ppm IDLH (10% LEL)
OSHA (US):	200 ppm TWA; 950 mg/m^3 TWA	
Mexico:	200 ppm TWA LMPE-PPT; 950 mg/m^3 TWA LMPE-PPT	
	250 ppm STEL [LMPE-CT]; 1190 mg/m^3 STEL [LMPE-CT]	
Styrene butadiene polymer	Mixture	
NIOSH:	10 mg/m^3 TWA total dust; 5 mg/m^3 TWA respirable dust	
OSHA (US):	15 mg/m^3 TWA total dust; 5 mg/m^3 TWA respirable fraction	
Mexico:	10 mg/m^3 TWA LMPE-PPT	20 mg/m^3 STEL [LMPE-CT]
Methyl acetate	79-20-9	
ACGIH:	200 ppm TWA	250 ppm STEL
NIOSH:	200 ppm TWA; 610 mg/m^3 TWA	250 ppm STEL; 760 mg/m^3 STEL
	3100 ppm IDLH (10% LEL)	
OSHA (US):	200 ppm TWA; 610 mg/m^3 TWA	
Mexico:	200 ppm TWA LMPE-PPT; 610 mg/m^3 TWA LMPE-PPT	
	250 ppm STEL [LMPE-CT]; 760 mg/m^3 STEL [LMPE-CT]	

Biological limit value

There are no biological limit values for any of this product's components.

Engineering Controls

Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear chemical safety goggles with a faceshield to protect against skin and eye contact when appropriate.

Skin Protection

Wear work clothes with long sleeves. Wear protective shoes.

Respiratory Protection

A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Light yellow Liquid	**Physical State**	liquid
Odor	sweet	**Color**	Light yellow
Odor Threshold	Not available	**pH**	Not available
Melting Point	Not available	**Boiling Point**	56 - 111 °C (132-231 °F)
Freezing point	Not available	**Evaporation Rate**	3.8
Boiling Point Range	Not available	**Flammability (solid, gas)**	Not available
Autoignition	465 °C (869 °F)	**Flash Point**	-18 °C (-0.4 °F)
Lower Explosive Limit	1.2 %	**Decomposition**	Not available
Upper Explosive Limit	12.8 %	**Vapor Pressure**	83 mmHg
Vapor Density (air=1)	4	**Specific Gravity (water=1)**	Not available
Water Solubility	Negligible	**Partition coefficient: n-octanol/water**	Not available
Viscosity	3500 cps	**Solubility (Other)**	Hydrocarbons
Density	0.97 (relative)	**VOC**	<250 g/L

Other Information

No additional information available.

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.

Chemical Stability
Stable under normal conditions of use.

Possibility of Hazardous Reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials
Acids, bases, strong oxidizing agents

Hazardous decomposition products
Oxides of carbon, oxides of nitrogen

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
May cause respiratory irritation. May cause drowsiness or dizziness.

Skin Contact
May cause allergic skin reaction. May cause skin irritation.

Eye Contact
Causes serious eye irritation.

Ingestion
May be fatal if swallowed and enters airways. May cause gastrointestinal irritation.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:
Polychloroprene (Mixture)
Oral LD50 Rat 20000 mg/kg

Chlorinated polypropylene (Mixture)
Oral LD50 Rat 5000 mg/kg

Polyphenol antioxidant (Trade Secret)
Oral LD50 Rat >5000 mg/kg
Dermal LD50 Rabbit >5000 mg/kg
Inhalation LC50 Rat >165 mg/L 1 h

Magnesium oxide (1309-48-4)
Oral LD50 Rat >5000 mg/kg

Zinc oxide (1314-13-2)
Oral LD50 Rat >15000 mg/kg
Inhalation LC50 Rat >5.7 mg/L

Toluene (108-88-3)
Oral LD50 Rat >7000 mg/kg
Dermal LD50 Rabbit 12 - 14 g/kg
Inhalation LC50 Rat 30 - 35 mg/L

Acetone (67-64-1)
Oral LD50 Rat 5800 mg/kg
Dermal LD50 Guinea pig >7246 mg/kg
Inhalation LC50 Rat 32000 ppm 4 h

Polychloroprene polymer (Mixture)
Oral LD50 Rat >5000 mg/kg

tert-Butyl acetate (540-88-5)
Oral LD50 4500 mg/kg
Dermal LD50 >2000 mg/kg
Inhalation LC50 12.52 mg/L 4 h

Thermoplastic elastomer (Trade Secret)
Oral LD50 >2000 mg/kg Dermal LD50 >2000 mg/kg

Styrene butadiene polymer (Mixture)
Oral LD50 Rat 6450 mg/kg

Methyl acetate (79-20-9)
Oral LD50 Rat 6482 g/kg
Dermal LD50 Rabbit >2000 mg/kg
Inhalation LC50 Rat >49 mg/L 4 hr

Immediate Effects
May be fatal if swallowed and enters airways. Causes serious eye irritation. May cause allergic skin reaction. Causes damage to central nervous system. May cause respiratory irritation. May cause drowsiness or dizziness.

Delayed Effects
Suspected of causing cancer. Causes damage to organs through prolonged or repeated exposure: central nervous system, blood.

Irritation/Corrosivity Data
Causes serious eye irritation. May cause respiratory irritation.

Respiratory Sensitization

No data available.

Dermal Sensitization
May cause allergic skin reaction.

Component Carcinogenicity

Polychloroprene	Mixture
IARC:	Supplement 7 [1987]; Monograph 19 [1979] (Group 3 (not classifiable))
Magnesium oxide	1309-48-4
ACGIH:	A4 – Not Classifiable as a Human Carcinogen
Toluene	108-88-3
ACGIH:	A4 – Not Classifiable as a Human Carcinogen
IARC:	Monograph 71 [1999]; Monograph 47 [1989] (Group 3 (not classifiable))
Acetone	67-64-1
ACGIH:	A4 – Not Classifiable as a Human Carcinogen

Germ Cell Mutagenicity
No data available.

Reproductive Toxicity
No data available.

Specific Target Organ Toxicity – Single Exposure
Central nervous system

Specific Target Organ Toxicity – Repeated Exposure
Blood, central nervous system

Aspiration hazard
May be fatal if swallowed and enters airways.

Medical Conditions Aggravated by Exposure
May cause allergic skin reaction. Aspiration into the lungs may cause chemical pneumonitis.

Additional Data
No additional information available.

Section 12 – ECOLOGICAL INFORMATION

Ecotoxicity
Avoid release to the environment.

Component Analysis – Aquatic Toxicity

Polyphenol antioxidant	Trade Secret
Fish:	LC50 96 h Oncorhynchus mykiss >0.2 mg/L [semi-static]
Algae:	EC50 72 h Pseudokirchneriella subcapitata >0.2 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna >0.2 mg/L IUCLID
Toluene	108-88-3
Fish:	LC50 96 h Pimephales promelas 15.22 – 19.05 mg/L [flow-through] (1 day old); LC50 96 h Pimephales promelas 12.6 mg/L [static]; LC50 96 h Oncorhynchus mykiss 5.89 – 7.81 mg/L [flow-through]; LC50 96 h Oncorhynchus mykiss 14.1 – 17.16 mg/L [static]; LC50 96 h Oncorhynchus mykiss 5.8 mg/L [semi-static]; LC50 96 h Lepomis macrochirus 11 – 15 mg/L [static]; LC50 96 h Oryzias latipes 54 mg/L [static]; LC50 96 h Poecilia reticulata 28.2 mg/L [semi-static]; LC50 96 h Poecilia reticulata 50.87 – 70.34 mg/L [static]
Algae:	EC50 96 h Pseudokirchneriella subcapitata >433 mg/L IUCLID; EC50 72 h Pseudokirchneriella subcapitata 12.5 mg/L [static] EPA
Invertebrate:	EC50 48 h Daphnia magna 5.46 – 9.83 mg/L [static] EPA; EC50 48 h Daphnia magna 11.5 mg/L IUCLID
Acetone	67-64-1
Fish:	LC50 96 h Oncorhynchus mykiss 4.74 – 6.33 mL/L; LC50 96 h Pimephales promelas 6210 – 8120 mg/L [static]; LC50 96 h Lepomis macrochirus 8300 mg/L
Invertebrate:	EC50 48 h Daphnia magna 10294 – 17704 mg/L [static] EPA; EC50 48 h Daphnia magna 12600 – 12700 mg/L IUCLID
tert-Butyl acetate	540-88-5
Fish:	LC50 96 h Pimephales promelas 296 – 362 mg/L [flow-through]; LC50 96 hr Oncorhynchus mykiss 240 mg/L
Invertebrate:	EC50 48 hr Daphnia magna 350 mg/L

Methyl acetate	79-20-9
Fish:	LC50 96 h Pimephales promelas 295 - 348 mg/L [flow-through]; LC50 96 h Brachydanio rerio 250 - 350 mg/L [static]
Algae:	EC50 72 h Desmodesmus subspicatus >120 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna 1026.7 mg/L IUCLID

Persistence and Degradability
No information available for the product.

Bioaccumulative Potential
No information available for the product.

Mobility
No information available for the product.

Other Toxicity
No additional information available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: Adhesives
Hazard Class: 3
UN/NA #: UN1133
Packing Group: II
Required Label(s): 3
Additional information: Special Provisions (172.102): 149, B52, IB2, T4, TP1, TP8

IATA Information:
UN#: UN1133

IMDG Information:
UN#: UN1133

TDG Information:
UN#: UN1133

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations
This material contains one or more of the following chemicals required to be identified under SARA Section 302 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

Toluene	108-88-3
SARA 313:	1 % de minimis concentration
CERCLA:	1000 lb final RQ; 454 kg final RQ
Acetone	67-64-1
CERCLA:	5000 lb final RQ; 2270 kg final RQ
tert-Butyl acetate	540-88-5
CERCLA:	5000 lb final RQ; 2270 kg final RQ

SARA Section 311/312 (40 CFR 370 Subparts B and C)
Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** No **Reactivity:** No

U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Magnesium oxide	1309-48-4	Yes	Yes	Yes	Yes	Yes
Zinc oxide	1314-13-2	Yes	Yes	Yes	Yes	Yes
Toluene	108-88-3	Yes	Yes	Yes	Yes	Yes
Acetone	67-64-1	Yes	Yes	Yes	Yes	Yes
tert-Butyl acetate	540-88-5	Yes	Yes	Yes	Yes	Yes
Styrene butadiene polymer	Mixture	No	Yes	Yes	Yes	Yes
Methyl acetate	79-20-9	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause reproductive/developmental effects

Toluene	108-88-3

Repro/Dev. Tox	developmental toxicity , 1/1/1991

Canadian WHMIS Ingredient Disclosure List (IDL)

Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

Magnesium oxide	1309-48-4
	1 %
Zinc oxide	1314-13-2
	1 %
Toluene	108-88-3
	1 %
Acetone	67-64-1
	1 %
tert-Butyl acetate	540-88-5
	1 %
Methyl acetate	79-20-9
	1 %

Component Analysis - Inventory

Polychloroprene (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Chlorinated polypropylene (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No

Polyphenol antioxidant (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX

Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No

Magnesium oxide (1309-48-4)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Zinc oxide (1314-13-2)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Toluene (108-88-3)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Acetone (67-64-1)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Yellow dye (2481-94-9)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Styrene butadiene polymer (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	NSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No

Methyl Aacetate (79-20-9)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX

Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

tert-Butyl acetate (540-88-5)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

HMIS Rating
Health: 2* Fire: 3 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings
Health: 2 Fire: 3 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
Revision Date: June 1, 2018
Revision Note: General Update

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:

The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use

Safety Data Sheet

Material Name: CAV-GRIP 3

Product #: 329902
331381 – Int. Cylinder
332659 – #85 Cylinder

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name: CAV-GRIP 3

Product Use: Adhesive

Manufacturer Information

Carlisle SynTec Systems
1285 Ritner Highway
Carlisle, PA 17013
USA
Phone: +1-800-479-6832
Emergency Phone #: +1-800-424-9300 (CHEMTREC)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Acute Toxicity - Inhalation: Category 5
Skin Irritation: Category 2
Eye Damage: Category 2A
Reproductive Toxicity: Category 2
STOT Repeated Exposure: Category 2
Aspiration: Category 1
Flammable Liquid: Category 2
Aquatic Hazard – Acute: Category 1
Aquatic Hazard – Long-term: Category 1
Extremely Flammable Aerosol: Category 1

GHS Label Elements

Symbol(s)

Signal Word
Danger

Hazard Statement(s)
May cause respiratory irritation.
Causes skin irritation.
Causes serious eye irritation.
Suspected of damaging fertility or the unborn child.
May cause damage to organs through prolonged or repeated exposure.
May be fatal if swallowed and enters airways.
Highly flammable liquid and vapor.
Very toxic to aquatic life.

Very toxic to aquatic life with long lasting effects.
Contains gas under pressure; may explode if heated.

Precautionary Statement(s)
Keep away from heat/sparks/open flames/hot surfaces – no smoking.
Avoid breathing dust/fume/gas/mist/vapors/spray.
Avoid release to the environment.
Use personal protective equipment as required.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lens, if present and easy to do. Continue rinsing.

POTENTIAL HEALTH EFFECTS

Acute Effects

EYES: Contact with eyes may cause irritation. Direct contact with liquid or vapors may cause stinging, tearing, redness, swelling, and eye damage.

SKIN: May cause skin irritation and/or dermatitis. Prolonged or repeated contact or exposure to vapors may cause redness, burning, and drying and cracking of the skin.

INHALATION: Breathing high concentrations of vapors may cause irritation of the nose and throat or signs of nervous system depression (i.e. – headache, nausea, drowsiness, dizziness, vomiting, loss of coordination and fatigue).

INGESTION: Ingestion may cause irritation of the digestive tract, nausea, vomiting, and signs of nervous system depression.

Chronic Effects
Avoid repeated exposure. May cause blood damage. Repeated contact may cause allergic reactions in very susceptible persons.

Aggravated Medical Conditions
Pre-existing eye, skin, or respiratory disorders may be aggravated by exposure to this product.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
79-20-9	Methyl acetate	22 – 40
142-82-5	Heptane	12 – 25
68476-86-8	Liquefied petroleum gas	5 – 15
115-10-6	Dimethyl ether	5 – 15
124-38-9	Carbon dioxide	1 – 7
108-88-3	Toluene	1 – 7

Any remaining ingredients (to comprise 100% of the product) should be considered a proprietary blend of non-hazardous substances, or materials below threshold reporting limits.

Section 4 - FIRST AID MEASURES

GENERAL ADVICE: Show this safety Data sheet to the doctor in attendance.

EYES: Flush with plenty of cool water for at least 15 minutes, holding eyelids apart for thorough irrigation. If irritation persists, get immediate medical attention.

SKIN: Wash affected area thoroughly with soap and water. Remove contaminated clothing and wash affected areas thoroughly with mild soap. If skin irritation persists, get immediate medical attention.

INGESTION: Do not induce vomiting – seek immediate medical attention. If vomiting occurs, keep head lower than hips to prevent aspiration.

INHALATION: Move to fresh air. If not breathing, give artificial respiration, preferably mouth-to-mouth. If breathing is difficult, give oxygen and get immediate medical attention.

NOTES TO PHYSICIAN: Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media
Carbon dioxide, dry chemicals, foam. Water may be helpful in keeping adjacent containers cool; avoid spreading the liquid with water used for cooling. Water-based sprinkler systems may help contain larger fires.

Specific Hazards arising from the Chemical
Closed containers may rupture if exposed to fire or extreme heat. May produce toxic fumes if burning.

Special protective Equipment: Wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions
Use personal protective equipment. Remove all sources of ignition.

Environmental Precautions
Prevent further leakage or spillage if safe to do so. Do not allow material to contaminate ground water system. Prevent product from entering drains. Do not flush into surface water or sanitary sewer system. Local authorities should be advised if significant spillages cannot be contained.

Methods for Clean-up
Dam up. Soak up with inert absorbent material. Pick up and transfer to properly labeled containers. Clean contaminated surface thoroughly.

Other Information
None known.

Section 7 - HANDLING AND STORAGE

Handling
Use only in area provided with appropriate exhaust ventilation. Do not breathe vapors or spray mist. Wear appropriate personal protective equipment. Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded. Keep away from open flames, hot surfaces and sources of ignition.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from extremes of heat or cold. Keep in properly labeled containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Hazardous Components	OSHA PEL	ACGIH TLV
Methyl acetate	200	200
Heptane	500	400
Liquefied petroleum gas	Not established	1000
Dimethyl ether	Not established	1000
Carbon dioxide	5000	5000
Toluene	200	20

Engineering Controls
Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face protection
Safety goggles or glasses, or full face shield.

Skin Protection
Protective gloves and impervious clothing. Consult the glove/clothing manufacturer for proper selection of materials.

Respiratory Protection
In operations where exposure limits are exceeded, use a NIOSH-approved respirator that has been selected by a technically qualified person for the specific work conditions.

Hygiene Practices
Avoid contact with skin, eyes and clothing. Remove and wash contaminated clothing before re-use. Wash thoroughly after handling. When using, do not eat, drink or smoke.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Green liquid	**Physical State**	liquid
Odor	Solvent odor	**Color**	Green
VOC (g/L)	194	**VOC (g/L) less exempt & water**	206
Non-volatile (wt%)	30.05	**Specific Gravity (g/l)**	0.825
Bulk Density (lb/gal)	6.87	**Solubility in Water**	Insoluble
pH	Not available	**Viscosity**	Not available
Evaporation rate	Faster than nBuAc	**Vapor Pressure (mmHg)**	Not available
Vapor Density	Heavier than air	**Boiling Point**	-24.0°F [-31.1°C]
Freezing/Melting Point	Not determined	**Flammability (solids)**	No data
Partition Coefficient (n-octonal/water)	No data	**Auto-ignition Temp**	No data
Decomposition Temp	No data	**Explosive Properties**	No data
Oxidizing Properties	No data	**Flash Point**	156.0°F [104.4°C]
Flammable Limits	Lower: 2.23 Upper: 11.90		

Section 10 - STABILITY AND REACTIVITY

Chemical Stability
Stable under normal conditions. Hazardous polymerization does not occur.

Conditions to Avoid
Keep away from open flames, hot surfaces, static electricity and sources of ignition. Avoid extremes of heat or cold.

Materials to Avoid
Incompatible with strong acids and bases, alkali metals, halogens, and strong oxidizing agents.

Hazardous decomposition products
Thermal decomposition can lead to release of irritating gases and vapors. Carbon monoxide, carbon dioxide, smoke, and other unidentified organic compounds may be formed during combustion.

Possibility of Hazardous Reactions
None under normal conditions of use.

Section 11 - TOXICOLOGICAL INFORMATION

Reproductive Toxicity:	Category 2	Acute Toxicity:	Oral: No data; Skin: No data; Inhalation: Category 5
Mutagenicity:	No data	Irritation:	Skin: Category 2
STOT-single exposure:	No data	Corrosivity:	No data
STOT-repeated exposure:	Category 2	Sensitization:	Respiratory: No data; Skin: No data
Aspiration Hazard:	Category 1	Typical Routes of Entry:	Inhalation, skin absorption, eye contact

Chronic Toxicity / Carcinogenicity
No known classifications.

Section 12 - ECOLOGICAL INFORMATION

Aquatic Toxicity:	Acute and prolonged Toxicity to Fish:	No data
	Acute Toxicity to Aquatic Invertebrates:	No data
	Environmental Fate and Pathways:	No data
Persistence and Degradability:	No data	
Bioaccumulative Potential:	No data	
Mobility in Soil:	No data	
Other Adverse Effects:	No data	

Section 13 - DISPOSAL CONSIDERATIONS

Waste Disposal Methods
Dispose of in accordance with all applicable local, state, and federal regulations. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans, or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (PROPANE, BUTANE)
Hazard Class: 2.1
UN/NA #: UN3501
ICAO / IATA: CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (PROPANE, BUTANE)
Hazard Class: 2.1
UN/NA #: UN3501
IMDG / IMO: CHEMICAL UNDER PRESSURE, FLAMMABLE, N.O.S. (PROPANE, BUTANE)
Hazard Class: 2.1
UN/NA #: UN3501

Section 15 - REGULATORY INFORMATION

US TSCA: Yes – All components are listed or exempt

OSHA Regulatory Status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

SARA 313
Section 313 OF Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). If listed below, this product contains a chemical or chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

Chemical Designation	Cas No.	Weight %
Toluene	108-88-3	1 – 7%

Clean Air Act, Section 112 Hazardous Air Pollutants (HAPS) (see 40 CFR 61)

Chemical Designation	Cas No.	Weight %
Toluene	108-88-3	1 – 7%

State Regulations

California Proposition 65
This product contains the following substance(s) known to the state of California to cause cancer or reproductive harm:

Chemical Name	CAS Number
Toluene	108-88-3
Ethylbenzene	100-41-4

Section 16 - OTHER INFORMATION

HMIS Rating
Health: 2 Fire: 3 Reactivity: 0 Personal Protection B
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Summary of Changes
Revision Date: December 30, 2019
Revision Note: General Update

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic

Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:
The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use.

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name: Universal Single-Ply Sealant
Synonyms: Silyl Terminated Polyether
Chemical Family: Mixture
Product Use: Sealant
Restrictions on Use: For industrial use only.

Manufacturer Information

Carlisle SynTec
1285 Ritner Highway
Carlisle, PA 17013
USA
Phone: +1-800-479-6832
Emergency Phone #: +1-800-424-9300 (CHEMTREC)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Hazardous classification: Irritant Category 2

GHS Label Elements

Symbol(s)

Signal Word: Warning

Hazard Statement(s)
H315 Causes skin irritation
H317 May cause allergic skin reaction
H318 Causes serious eye damage

Precautionary Statement(s)
P273 Avoid release into the environment
P280 Wear protective gloves/protective clothing/eye protection
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 IF IN EYES: Rinse cautiously with water for several minutes.
P338 Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/container in accordance with local regulation.
R-Phrases

R38 Irritating to skin.
R41 Risk serious damage to eyes.
R43 May cause sensitization by skin contact.

S-Phrases

S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S39 Wear eye/face protection.
Carcinogenity: This product contains no ingredient listed as a carcinogen on California Proposition 65 list.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
1760-24-3	Amino Silane	1-3

Section 4 - FIRST AID MEASURES

Inhalation

An unlikely route of entry. Remove to fresh air. Consult a physician.

Skin

Clean product from affected area with Ethyl alcohol, then wash with soap and water.

Eyes

Flush with large amounts of water for at least 15 minutes. Consult a Physician if ill effects or irritation occurs.

Ingestion

An unlikely route of entry. Consult a physician.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Water, CO2, Dry Chemical, Foam.

Unusual Fire and Explosion Hazards: None

Flashpoint: N/A**.**

Upper Falmmability Limit: N/A

Lower Flammability Limit: N/A

Auto Ignition Temperature: N/A

Sensitivity to Impact: N/A

Sensitivity to Static Discharge: N/A

Hazardous Combustion Products: Thermal decomposition may produce toxic fumes of Carbon Monoxide, Carbon dioxide, Sulfur oxides and Hydrogen sulfide.

Section 6 - ACCIDENTAL RELEASE MEASURES

Handling Precautions: Wear personal protective clothing and equipment, see Section 8. Avoid eye, skin and clothing contact.

Cleanup: Collect spill with absorbent material such as cardboard, allow to cure and place into a container approved for waste disposal.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 - HANDLING AND STORAGE

Handling Precautions: Use personal protection recommended in section 8. Avoid eye, skin and clothing contact.

Prevention of Fires and Explosions: Product is not considered flammable under normal conditions, and product is not considered explosive.

Storage Requirments: Store in a cool dry area (this product polymerizes when in contact with moisture.)

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye/face protection: Wear safety glasses or goggles to avoid eye contact.

Skin Protection: Wear appropriate work clothing. Wear protective shoes. Recommended material: protective skin cream.

Environmental Exposure Control: No specific controls are needed.

Hand Protection: Wear impervious gloves such as vinyl to minimize contact with skin.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Paste, mild mint scent	**Physical State**	Water Solubility: Insoluble

Odor Threshold	N/A	**pH**	N/A
Melting Point	N/A	**Flash Point**	N/A
Freezing point	N/A	**Flash Point Method**	Based on FP of the most volatile component
Autoignition	N/A	**Vapor Pressure**	<1
Lower Explosive Limit	N/A	**Specific Gravity (water=1)**	0.97
Upper Explosive Limit	N/A	**% Volatile**	2.23%
Vapor Density (air=1)	>1	**VOC**	21.64 g/l
Density	8.1 lbs./gal. (calculated)		

Other Information
No additional information available.

Section 10 - STABILITY AND REACTIVITY

Chemical Stability
Stable under normal conditions of use.

Conditions to Avoid
None Known

Incompatible Materials
None Known

Hazardous decomposition products
Thermal decomposition may produce toxic fumes of Carbon Monoxide (CO) and/or Carbon Dioxide (CO2).

Section 11 - TOXICOLOGICAL INFORMATION

Amino Silane (Refer to sections 2 and 3)
Oral: LD50 > 2,000 mg/kg. Remark: Very low order of toxicity.
Skin Absorption: LD50 > 2,000 mg/kg. Remark: Very low order of toxicity.
Inhalation: LC50 Not acutely Toxic.

Skin Direct Contact: Slight irritation

Eye Direct Contact: Severe irritation. Remark: Causes corneal injury.

Exposure Limits: Not applicable

Sensitization: No

Reproductive Toxicity: No

Mutagenicity: No

Teratogenicity: No

Synergistic Products: None

Section 12 - ECOLOGICAL INFORMATION

No known applicable information.

Section 13 - DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. This product becomes a firm synthetic rubber when cured. Please allow to cure before disposal.

Section 14 - TRANSPORT INFORMATION

Special shipping information: None

DOT: Not regulated

TDG: Not available

PIN: Not available

Section 15 - REGULATORY INFORMATION

Rotterdam Convention (PIC) Annex III: listed (Tributyl tin compounds (impurities) <2ppm)

U.S. Regulatory information

OSHA 29 CFR 1910-1200 – Irritant.

TSCA – All components of this product are listed on TSCA Inventory.

CERCLA Reportable Quantity – Not applicable.

SARA Title III:

Section 302 Extremely Hazardous Substances – None.

Section 304 – Not applicable.

Section 311/312 – Immediate (acute) health hazard.

Section 313 – None.

RCRA – Refer to section 13.

California Proposition 65 Carcinogens: This product does not contain any chemicals known by the State of California to cause cancer.

California Proposition 65 Reproductive Toxins: This product does not contain any chemicals known by the State of California to cause reproductive harm.

Canadian WHMIS Classification- D2B

Section 16 - OTHER INFORMATION

HMIG Rating

Health: 1 Fire: 0 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Summary of Changes
Revision Date: June 1, 2018
Revision Note: General Update

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund

Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:

The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use.

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name
Weathered Membrane Cleaner

Chemical Family
cleaner

Product Use
cleaner

Restrictions on Use
For industrial use only

Manufacturer Information

Carlisle SynTec
1285 Ritner Highway
Carlisle, PA 17013 USA
Phone: +1-800-479-6832
Emergency Phone #: +1-800-424-9300 (Chemtrec)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Flammable Liquids - Category 2
Aspiration Hazard - Category 1
Skin Corrosion/Irritation - Category 2
Specific Target Organ Toxicity - Single Exposure - Category 3
Specific Target Organ Toxicity - Repeated Exposure - Category 1 (lungs, brain, kidneys, nervous system)

GHS Label Elements

Symbol(s)

Signal Word
Danger

Hazard Statement(s)
Highly flammable liquid and vapor
May be fatal if swallowed and enters airways
Causes skin irritation
May cause drowsiness or dizziness
Causes damage to organs through prolonged or repeated exposure

Precautionary Statement(s)

Prevention
Keep container tightly closed
Keep away from heat/sparks/open flame/hot surfaces - No smoking
Ground/Bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Take precautionary measures against static discharge
Use only non-sparking tools
Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Do not breathe dust/fume/gas/mist/vapours/spray
Wash thoroughly after handling
Contaminated work clothing must not be allowed out of the workplace
Do not eat, drink or smoke when using this product

Response
In case of fire: Use appropriate media to extinguish
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing
Call a POISON CENTER or doctor if you feel unwell
IF SWALLOWED: Immediately call a POISON CENTER
Do NOT induce vomiting
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
Specific treatment (see label)

Storage
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
64742-89-8	Solvent naphtha, petroleum, light aliphatic	60-100

Section 4 - FIRST AID MEASURES

Inhalation

Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell.

Skin
Remove/take off immediately all contaminated clothing. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse.

Eyes
Rinse cautiously with water for 15 minutes. If eye irritation persists: Get medical advice/attention.

Ingestion
Aspiration hazard. Do NOT induce vomiting. If vomiting occurs, keep head lower than hips to help prevent aspiration. If swallowed, get medical attention.

Indication of any immediate medical attention and special treatment needed
Treat symptomatically and supportively.

Most Important Symptoms/Effects

Acute
May be fatal if swallowed and enters airways. Causes skin irritation. May cause drowsiness or dizziness.

Delayed
lung damage, brain damage, kidney damage, nervous system damage

Section 5 - FIREFIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media
Use carbon dioxide, regular dry chemical, regular foam or water.

Unsuitable Extinguishing Media
Do not use high-pressure water streams.

Special Hazards Arising from the Chemical
Highly flammable liquid and vapor. Vapors are heavier than air and may flashback.

Hazardous Combustion Products
toxic gases: carbon monoxide, carbon dioxide.

Firefighting Measures
Move container from fire area if it can be done without risk. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible withdraw from area and let fire burn.

Special Protective Equipment and Precautions for Firefighters
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up
Remove all sources of ignition. Avoid breathing vapors. Wear self-contained breathing apparatus and protective clothing. Use non-sparking tools and equipment. Flammable liquid: Fire or projection hazard. Vapor-suppressing foam may be used to control vapors. Eliminate all sources of ignition. All equipment used when handling the product must be grounded. Stop leak if possible without personal risk. Do not touch or walk through spilled material. Prevent entry into waterways, sewers, basements, or confined areas. Dike for later disposal. Use non-sparking tools. Large spills: Keep unnecessary people away, isolate hazard area and deny entry. Prevent entry into waterways, sewers, basements, or confined areas. Dike for later disposal. Use water spray jet to minimize or disperse vapors. Runoff may create fire or explosion hazard. Absorb with earth, sand or other non-combustible material and transfer to container. Dispose in accordance with all applicable federal, state/regional and local laws and regulations.

Environmental Precautions
Avoid release to the environment. Collect spillage.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Highly flammable liquid and vapor. Keep container tightly closed. Keep away from heat/sparks/open flame/hot surfaces - No smoking. Ground/Bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Wear protective gloves/protective clothing/eye protection/face protection. Keep away from incompatible materials. Do not breathe vapor. Use only with adequate ventilation. Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke when using this product. Do not ingest. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage, Including any Incompatibilities
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up
Store in accordance with all current regulations and standards. Store in a cool dry place. Keep away from sources of ignition. Ground/Bond container and receiving equipment. Keep away from incompatible materials.

Incompatible Materials
Strong acids, alkalies, oxidizing agents, chlorine, oxygen

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits
ACGIH, NIOSH, EU, OSHA (US) and Mexico have not developed exposure limits for any of this product's components

Biological limit value
There are no biological limit values for any of this product's components.

Engineering Controls
Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection
Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection
Wear appropriate chemical resistant clothing.

Respiratory Protection
A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Glove Recommendations
Wear appropriate chemical resistant gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	clear liquid	**Physical State**	liquid
Odor	hydrocarbon odor	**Color**	clear
Odor Threshold	Not available	**pH**	Not available
Melting Point	Not available	**Boiling Point**	118 - 150 °C
Freezing point	Not available	**Evaporation Rate**	1
Boiling Point Range	Not available	**Flammability (solid, gas)**	Not available
Autoignition	320 °C(608°F)	**Flash Point**	18 °C(64.4°F)
Lower Explosive Limit	0.9	**Decomposition**	Not available
Upper Explosive Limit	7	**Vapor Pressure**	11.5 mmHg
Vapor Density (air=1)	4	**Specific Gravity (water=1)**	Not available
Water Solubility	negligible	**Partition coefficient: n-octanol/water**	Not available
Viscosity	Not available	**Solubility (Other)**	Not available
Density	0.74 - 0.76	**VOC**	100 %

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.

Chemical Stability

Stable under normal conditions of use.

Possibility of Hazardous Reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Keep away from heat/sparks/open flame/hot surfaces - No smoking. Avoid contact with incompatible materials.

Incompatible Materials
Strong acids, alkalies, oxidizing agents, chlorine, oxygen

Hazardous decomposition products
Releases toxic gases: carbon monoxide, carbon dioxide.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
May cause drowsiness or dizziness.

Skin Contact
Causes skin irritation.

Eye Contact
May cause eye irritation.

Ingestion
May cause irritation of the mouth and throat. May cause central nervous system depression. Aspiration Hazard. May be fatal if swallowed and enters airways.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:
Solvent naphtha, petroleum, light aliphatic (64742-89-8)
Oral LD50 Mouse 5000 mg/kg
Dermal LD50 Rabbit 3000 mg/kg

Product Toxicity Data

Product Analysis LD/LC 50 Toxicity Values

Oral LD50:	Rat >2000 ring/kg LD50
Dermal LD50:	Rat 2000 mg/kg
Inhalation LC50:	Rat >5000 ppm 1 hour LD50

Immediate Effects
Causes skin irritation. May cause drowsiness or dizziness.

Delayed Effects

Lung damage, brain damage, kidney damage, liver damage, nervous system damage

Irritation/Corrosivity Data
Causes skin irritation.

Respiratory Sensitization
No information available for the product.

Dermal Sensitization
No information available for the product.

Component Carcinogenicity
None of this product's components are listed by ACGIH, IARC, NTP, DFG or OSHA

Germ Cell Mutagenicity
No information available for the product.

Tumorigenic Data
No data available

Reproductive Toxicity
No information available for the product.

Specific Target Organ Toxicity - Single Exposure
Central nervous system

Specific Target Organ Toxicity - Repeated Exposure
lungs, brain, kidneys, liver, nervous system

Aspiration hazard
Aspiration Hazard. May be fatal if swallowed and enters airways.

Medical Conditions Aggravated by Exposure
Skin disorders, respiratory disorders, liver disorders, kidney disorders, central nervous system disorders

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

Solvent naphtha, petroleum, light aliphatic	64742-89-8
Algae:	EC50 72 h Pseudokirchneriella subcapitata 4700 mg/L IUCLID

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of contents/container in accordance with local/regional/national/international regulations. Subject to disposal regulations. U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

Component Waste Numbers
The U.S. EPA has not published waste numbers for this product's components

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: Paint Related Material
Hazard Class: 3
UN/NA #: UN1263
Packing Group: II
Required Label(s): 3
Additional information: Special provisions 149, B52, IB2, T4, TP1, TP8

IATA Information:
Shipping Name: Paint Related Material
Hazard Class: 3
UN#: UN1263
Packing Group: II
Required Label(s): 3

TDG Information:
Shipping Name: Paint Related Material
Hazard Class: 3
UN#: UN1263
Packing Group: II
Required Label(s): 3

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations
None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.
SARA Section 311/312 (40 CFR 370 Subparts B and C)
Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** No **Reactivity:** No

U.S. State Regulations
None of this product's components are listed on the state lists from CA, MA, MN, NJ or PA

Not listed under California Proposition 65

Canadian WHMIS Ingredient Disclosure List (IDL)
The components of this product are either not listed on the IDL or are present below the threshold limit listed on the IDL.

Component Analysis - Inventory
Solvent naphtha, petroleum, light aliphatic (64742-89-8)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

HMIS Rating
Health: 2* Fire: 3 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings
Health: 2 Fire: 3 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
Revision Date: January 24, 2019
Revision Note: General Update

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:
The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition

that the person receiving it shall make his own determination of the suitability of the material for his particular use.

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name: Clear Cut-Edge Sealant
Synonym: Industrial Sealant
Chemical Family: Solvent Based Sealant
Product Use: Sealant for TPO Single-Ply Roofing Membranes
Restrictions on Use: For industrial use only**.**

Manufacturer Information

Carlisle SynTec
1285 Ritner Highway
Carlisle, PA 17013
USA
Phone: +1-800-479-6832
Emergency Phone #: +1-800-424-9300 (CHEMTREC)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Reproductive Toxicity- Category 2
Skin Irritation - Category 2
Aspiration Hazard - Category 1
Specific Target Organ Toxicity - Single Exposure - Category 3
Specific Target Organ Toxicity - Repeated Exposure - Category 2
Flammable Liquids- Category 2

GHS Label Elements

Symbol(s)

Signal Word
Danger

Hazard Statement(s)
H225: Highly flammable liquid and vapour.
H304: May be fatal if swallowed and enters airways.
H315: Causes skin irritation.
H336: May cause drowsiness or dizziness.
H361: Suspected of damaging fertility or the unborn child.
H373: May cause damage to organs through prolonged or repeated exposure.

Precautionary Statement(s)

Prevention

[201]: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P210: Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P233: Keep container tightly closed.
P240: Ground/bond container and receiving equipment.
P241: Use explosion-proof electrical/ventilating/lighting equipment.
P242: Use only non-sparking tools.
P243: Take precautionary measures against static discharge.
P260: Do not breathe dust/fume/gas/mist/vapors/spray.
P264: Wash hands, forearms, and other exposed areas thoroughly after handling.
P271: Use only outdoors or in a well-ventilated area.
P272: Contaminated work clothing should not be allowed out of the workplace.
P273: Avoid release to the environment.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response

P301+P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P302+P352: IF ON SKIN: Wash with plenty of soap and water.
P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340: IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313: IF exposed or concerned: Get medical advice/attention.
P312: Call a POISON CENTER or doctor/physician if you feel unwell.
P314: Get medical advice/attention if you feel unwell.
P331: Do NOT induce vomiting.
P332+P313: If skin irritation occurs: Get medical advice/attention.
P337+P313: If eye irritation persists: Get medical advice/attention.
P342+P311: If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
P362: Take off contaminated clothing and wash before reuse.
P370+P378: In case of fire: Use appropriate media to extinguish.
P391: Collect spillage.

Storage

P403 + P235 Store in a well-ventilated place. Keep cool
P403 + P233Store in a well-ventilated place.Keep container tightly closed
P405 Store locked up

Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulations

EMERGENCY OVERVIEW

IMMEDIATE CONCERNS: DANGER! Extremely flammable liquid and vapor. Vapor may cause flash fire and explosion. Harmful or fatal if swallowed. Harmful if absorbed through the skin. Pulmonary aspiration hazard. After ingestion, may enter lungs and produce damage. High vapor concentrations may cause drowsiness. Can cause eye, skin and respiratory tract irritation.

POTENTIAL HEALTH EFFECTS

EYES: Can cause severe eye irritation and corneal damage.
SKIN: Causes defatting and skin irritation. Can cause dermatitis.
SKIN ABSORPTION: May be absorbed through the skin in harmful amounts.
INGESTION: Can cause gastrointestinal irritation, nausea and vomiting. Aspiration of material into the lungs may cause chemical pneumonitis, which can be fatal. Harmful or fatal if swallowed.
INHALATION: May cause nose or throat irritation. High concentrations may lead to central nervous system effects (drowsiness, dizziness, nausea, headaches, paralysis and loss of consciousness).
ROUTES OF ENTRY: Eye Contact, Ingestion, Inhalation, Skin Absorption, and Skin Contact
TARGET ORGAN STATEMENT: Central Nervous System (CNS)
IRRITANCY: Eyes, nose, throat, respiratory tract, and skin irritation.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
108-88-3	Toluene	45 - 70
1330-20-7	Xylene(o-, m-, p-Isomers)	15-40

Section 4 - FIRST AID MEASURES

EYES: Immediately flush eyes with plenty of tempered water (at least 15-20 minutes) lifting upper and lower eyelids occasionally. Get immediate medical attention.

SKIN: Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Get medical attention if symptoms occur. Wash or dispose of clothing before reuse.

INGESTION: Do not induce vomiting, keep person warm, quiet and get medical attention immediately. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Aspiration of this material into the lungs due to vomiting can cause chemical pneumonitis which can be fatal.

INHALATION: Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

SIGNS AND SYMPTOMS OF OVEREXPOSURE

EYES: Liquid and vapor can severely irritate the eyes depending on type of exposure (splash, vapor) and exposure time.

SKIN: Mild to moderate skin irritant.

SKIN ABSORPTION: May be absorbed through the skin and can contribute to overall exposure. Effects are similar to CNS depression.

INGESTION: May result in central nervous system (CNS) depression with symptoms such as headaches, nausea, vomiting, diarrhea, dizziness, incoordination and unconsciousness. Aspiration of material into lungs may cause chemical pneumonitis which can be fatal.

INHALATION: High vapor concentrations may cause CNS depression with symptoms including light headedness, giddiness, nausea, drowsiness, headache, nose, throat and respiratory tract irritation, reduced appetite, confusion, and unconsciousness.

ACUTE TOXICITY: High vapor concentrations may cause central nervous system (CNS) depression with symptoms including light headedness, giddiness, nausea, drowsiness, headache, nose, throat and respiratory tract irritation, reduced appetite, confusion and unconsciousness.

CHRONIC EFFECTS: Damage to the nervous system of the extremities, peripheral neuropathy, with symptoms including numbness, tingling and weakness in the toes and fingers, sensory impairment to touch, pain, vibration and temperature, muscular weakness, blurred vision, coldness of extremities, loss of body weight and reflexes, and even paralysis. Frequent or prolonged contact may irritate the skin and cause a skin rash (dermatitis).

Section 5 - FIRE FIGHTING MEASURES

FLAMMABLE CLASS: Class IB
GENERAL HAZARD: Flammable liquid and vapor.

Extinguishing Media
Dry chemical, foam, carbon dioxide, water spray or fog.

Explosion Hazards
Avoid fire, sparks, static electricity and hot surfaces. Liquid readily evaporates at room/ambient temperature. Vapors are invisible, flammable, heavier than air, and may accumulate in low areas and spread long distances. Distant ignition and flashback are possible.

Hazardous Combustion Products
Carbon Monoxide, Carbon Dioxide, Aldehydes

Fire Fighting Measures
As in any fire, wear self-contained breathing apparatus with pressure-demand, full face piece SCBA (MSHA/NIOSH approved or equivalent) and full protective gear.

Sensitive to Static Discharge: Likely to catch fire from near-by spark. Static charge may accumulate by flow or agitation. Grounding and bonding of containers is required.

Hazardous Decomposition Products: Carbon Monoxide and Carbon Dioxide may form when heated to decomposition.

Section 6 - ACCIDENTAL RELEASE MEASURES

SMALL SPILL: Dike area to contain spill. Take precautions as necessary to prevent contamination of ground and surface waters. Recover spilled material on absorbent, such as sawdust or vermiculite, and sweep into closed containers for disposal. After all visible traces, including ignitible vapors, have been removed, thoroughly wet vacuum the area. Do not flush to sewer. If area of spill is porous, remove as much contaminated earth and gravel, etc. as necessary and place in closed containers for disposal. Only those persons who are adequately trained, authorized, and wearing the required personal protective equipment (PPE) should participate in spill response and clean-up.

LARGE SPILL: Keep spectators away. Only those persons who are adequately trained, authorized and wearing the required personal protective equipment (PPE) should participate in spill response and clean-up. Ventilate the area by natural means or by explosion proof mechanical means (i.e. fans). Know and prepare for spill response before using or handling this product. Eliminate all ignition sources (flames, hot surfaces, portable heaters and sources of electrical, static, or frictional sparks). Dike and contain spill with inert material (e.g. sand, earth). Transfer liquids to covered and labeled metal containers for recovery or disposal, or remove with inert absorbent. Use only non-sparking tools and appropriate PPE. Place absorbent diking materials in covered metal containers for disposal. Prevent contamination of sewers, streams, and groundwater with spilled material or used absorbent.

Section 7 - HANDLING AND STORAGE

GENERAL PROCEDURES: For professional or industrial use only. Follow label instructions. Keep out of the reach of children. Not for consumption. No smoking. Do not breathe vapors. Avoid contact with body. Turn off all pilot lights, flames, stoves, heaters, electric motors, welding equipment and other sources of ignition. Empty containers must not be washed and re-used for any purpose. Contact lens wearers must wear protective eye wear around chemical vapors and liquid. Wash hands thoroughly after handling. Flammable vapors may cause flash fire or ignite explosively. To prevent build-up of vapors, use adequate natural and/or mechanical ventilation (e.g. open all windows and doors to achieve cross ventilation). Containers may be hazardous when empty. Never use welding or cutting torch on or near container. Do not cut, drill, grind, or expose containers to heat, sparks, static electricity or other source of ignition. Explosion may occur causing injury or death.

HANDLING: Use adequate ventilation and appropriate respiratory protection to avoid breathing vapors when cover is removed. Ground and bond all equipment when handling flammable solvent-borne material.

Storage
Keep container closed when not in use. Store in a dry, well ventilated area, out of the sun and away from ignition sources. Do not remove or deface label. Prevent water or moist air from entering container.

STORAGE TEMPERATURE: 15.5°C (60°F) Minimum to 35°C (95°F) Maximum

Incompatible Materials
Strong oxidizing agents, acids, bases

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Toluene	108-88-3	
OSHA (US):	200 ppm TWA	300 ppm STEL Ceiling
ACGIH:	20 ppm TWA	
Xylene(o-, m-, p-Isomers)	1330-20-7	
OSHA (US):	100ppm TWA; 435 mg/m^3 TWA	
ACGIH	100 ppm TWA; 434 mg/m^{3}TWA	150 ppm; 651 mg/m^3 STEL

Engineering Controls

Provide sufficient explosion proof mechanical (general and/or local exhaust) ventilation to maintain exposure below the occupational exposure limit and exposure concentration.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection

Wear safety glasses with side shields (or goggles) or a full face respirator.

Skin Protection

Wear chemical protective clothing & boots to prevent repeated or prolonged skin contact. Wear impervious gloves, if needed, to prevent repeated or prolonged skin contact.

Respiratory Protection

NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 requirements must be followed whenever workplace conditions warrant a respirator's use.

Glove Recommendations

Wear appropriate chemical resistant gloves such as nitrile rubber.

WORK HYGIENIC PRACTICES: Use good hygiene practices when handling this material. Wash hands thoroughly after use.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	viscous liquid	**Physical State**	liquid
Odor	Solvent-like	**Color**	clear
Boiling Point Range	110.6°C(231°F) to 137°C(278.6°F)	**Flammability Limit**	1.0 to 7.1
Autoignition	526 °C (980 °F)	**Flash Point**	8.9°C (48 °F)
Specific Gravity (water=1)	0.872	**% Volatile (by weight)**	84.1
Vapor Density (air=1)	4	**VOC**	732.800 g/L EPA method 24
Density	7.27 lbs/gal		

COMMENTS: 5.27 lb VHAP/lb Solid 84.1% by weight HAP

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.
Chemical Stability
Stable under normal conditions of use.
Possibility of Hazardous Reactions
Hazardous polymerization will not occur.
Conditions to Avoid
Avoid fire, sparks, static electricity and hot surfaces.
Incompatible Materials
Strong oxidizing agents, strong acids and strong bases.
Hazardous decomposition products
Carbon monoxide and carbon dioxide may form when heated to decomposition.

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure
Inhalation
May cause respiratory irritation.
Skin Contact
Causes skin irritation.

Irritation
Eyes, nose, throat, respiratory tract irritation.

Corrosivity
Not applicable

Sensitization:
Not applicable

Neurotoxicity:
Not applicable

Genetic Effects:
Not applicable

Mutagenicity:
Not applicable

Reproductive Effects:
This product contains toluene, a chemical known to the state of California to cause birth defects or other reproductive harm.

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:
Toluene (108-88-3)
Oral LD50 Rat 2600 mg/kg - 7500 mg/kg
Dermal LD50 Rabbit 12,124 mg/kg
Inhalation LD50 Rat 8000 ppm (4hr dose)

Xylene (1330-20-7)
Oral LD50 Rat 4300 mg/kg
Dermal LD50 Rabbit 2000 mg/kg
Inhalation LD50 Rat 26800 ppm

Component Carcinogenicity

Toluene	108-88-3
IARC:	3
Xylene(o-, m-, p-Isomers)	1330-20-7
IARC:	3

Section 12 - ECOLOGICAL INFORMATION

Environmental Data
This product contains components that will normally float on water. These components may be harmful to aquatic organisms and may cause long term adverse effects in the aquatic environment.

Ecotoxicological Information:

Contains components that are potentially toxic to freshwater and saltwater ecosystems.

Chemical Name	Wt.%	CAS
Toluene	45 - 70	108-88-3
Xylenes (o-,m-,p- Isomers)	15 - 40	1330-20-7

Bioaccumulation/Accumulation
Contains components with the potential to bio-accumulate.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name: ADHESIVES
Hazard Class: 3
UN/NA #: UN1133
Packing Group: II
NAERG: 128
Marine Pollutant #1: None
OTHER SHIPPING INFORMATION: contains (Toluene, Xylene)
SPECIAL SHIPPING NOTES: If individual container size is less than 1.3 gallons, the proper shipping name is:
ORM-D Consumer Commodity
Non-Regulated

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations
None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.
SARA Section 311/312 (40 CFR 370 Subparts B and C)
Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** No **Reactivity:** No

EPCRA SECTION 313 SUPPLIER NOTIFICATION

Chemical Name	Wt.%	CAS
Toluene	45 - 70	108-88-3
Xylenes (o-,m-,p- Isomers)	15 - 40	1330-20-7

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Chemical Name	Wt.%	CERCLA RQ
Toluene	45 - 70	
Xylenes (o-,m-,p- Isomers)	15 - 40	100

TSCA (TOXIC SUBSTANCE CONTROL ACT)

Chemical Name	CAS	TSCA SECTION
Toluene	108-88-3	1,000 lbs.
Xylenes (o-,m-,p- Isomers)	1330-20-7	8a, 8d, 12b,

CLEAN AIR ACT

Chemical Name	Wt.%	CAS
Toluene	45 - 70	108-88-3
Xylenes (o-,m-,p- Isomers)	15 - 40	1330-20-7

CALIFORNIA PROPOSITION 65: This product contains toluene, a chemical known to the state of California to cause birth defects or other reproductive harm.

Chemical Name	Wt.%	Listed
Toluene	45 – 70	Developmental Toxicity

STATES WITH SPECIAL REQUIREMENTS

Chemical Name	Requirements
Toluene	New Jersey Right to Know List Pennsylvania Right to Know List Massachusetts Toxic Use Reduction Act (TURA) Reportable Chemical
Xylenes (o-,m-,p-Isomers)	New Jersey Right to Know List Pennsylvania Right to Know List Massachusetts Toxic Use Reduction Act (TURA) Reportable Chemical Illinois Right to Know List Minnesota Right to Know List Rhode Island Right to Know List

Canadian WHMIS Ingredient Disclosure List (IDL)
CANADA
WHMIS HAZARD SYMBOL AND CLASSIFICATION

Flammable Liquid

Toxic

DOMESTIC SUBSTANCE (INVENTORY): Toluene and Xylene are specified on the Canadian Domestic Substance List (DSL).

Section 16 - OTHER INFORMATION

HMIS Rating

Health: 2 Fire: 3 Reactivity: 0 Personal Protection B
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings

Health: 2 Fire: 3 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
Revision Date: January 24, 2019
Revision Note: General Update

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

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Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name: Water Cut-Off Mastic
Synonyms: Butyl Mastic
Chemical Family: Mastic
Product Use: Elastomeric sealer for Single-Ply Membranes
Restrictions on Use: For industrial use only**.**

Manufacturer Information

Carlisle SynTec
1285 Ritner Highway
Carlisle, PA 17013
USA
Phone: +1-800-479-6832
Emergency Phone #: +1-800-424-9300 (CHEMTREC)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Flammable Liquids - Category 2
Skin Corrosion/Irritation - Category 2
Specific Target Organ Toxicity - Single Exposure - Category 3

GHS Label Elements

Symbol(s)

Signal Word
Danger

Hazard Statement(s)
Highly flammable liquid and vapor
Causes skin irritation
May cause drowsiness or dizziness

Precautionary Statement(s)

Prevention
Keep container tightly closed
Keep away from heat/sparks/open flame/hot surfaces - No smoking
Ground/Bond container and receiving equipment
Use explosion-proof electrical/ventilating/lighting equipment
Take precautionary measures against static discharge
Use only non-sparking tools

Use only outdoors or in a well-ventilated area
Wear protective gloves/protective clothing/eye protection/face protection
Avoid breathing dust/fume/gas/mist/vapours/spray
Wash thoroughly after handling

Response
In case of fire: Use appropriate media to extinguish
IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing
IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower
If skin irritation occurs: Get medical advice/attention
Take off contaminated clothing and wash before reuse
Call a POISON CENTER or doctor if you feel unwell
Specific treatment (see label)

Storage
Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
Trade Secret	Silica compound	1-5
Trade Secret	Polyphenol antioxidant	< 0.1
Trade Secret	Severely hydrotreated paraffinic oil	1-5
Trade Secret	Polybutene	10-30
64742-89-8	Solvent naphtha, petroleum, light aliphatic	10-30
Mixture	Hydrous clay	3-7

Section 4 - FIRST AID MEASURES

Inhalation
Remove person to fresh air and keep comfortable for breathing. Give artificial respiration if not breathing. Call a POISON CENTER or doctor if you feel unwell.

Skin
Remove/Take off immediately all contaminated clothing and wash it before reuse. Rinse skin with water/shower. If skin irritation occurs, get medical advice/attention.

Eyes
Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists, get medical advice/attention.

Ingestion
If swallowed, do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Indication of any immediate medical attention and special treatment needed
Treat symptomatically and supportively.

Most Important Symptoms/Effects

Acute
Causes skin irritation. May cause drowsiness or dizziness.

Delayed
No information on significant adverse effects.

Section 5 - FIREFIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media
Dry chemical, foam or carbon dioxide. Water may be ineffective. Use water spray to keep containers cool.

Unsuitable Extinguishing Media
Do not use high-pressure water streams.

Special Hazards Arising from the Chemical
Highly flammable liquid and vapor. Can burn and explode easily when exposed to open flames or high heat. Vapors are heavier than air and may travel a considerable distance to a source of ignition and flashback.

Hazardous Combustion Products
Oxides of carbon, aldehydes

Firefighting Measures
Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Section 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures
Wear personal protective clothing and equipment, see Section 8.

Methods and Materials for Containment and Cleaning Up

Remove all sources of ignition. Avoid breathing vapors. Ventilate affected area. Absorb with earth, sand or other non-combustible material and transfer to container. Use non-sparking tools. Dike for later disposal. Dispose in accordance with all applicable regulations.

Environmental Precautions
Avoid release to the environment.

Section 7 - HANDLING AND STORAGE

Precautions for Safe Handling
Keep away from heat/sparks/open flames/hot surfaces. Take precautionary measures against static discharge. Ground/bond container and receiving equipment. Use non-sparking tools. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe

dust/fume/gas/mist/vapors/spray. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. KEEP OUT OF REACH OF CHILDREN.

Conditions for Safe Storage, Including any Incompatibilities

Store in a well-ventilated place. Keep container tightly closed
Keep cool
Store locked up
Keep away from heat and ignition sources. Keep away from incompatible materials. Do not cut, puncture, or weld on or near this container.

Incompatible Materials

Strong oxidizing agents, acids, bases

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Component Exposure Limits

Calcium carbonate	1317-65-3	
NIOSH:	10 mg/m^3 TWA total dust; 5 mg/m^3 TWA respirable dust	
OSHA (US):	15 mg/m^3 TWA total dust; 5 mg/m^3 TWA respirable fraction	
Mexico:	10 mg/m^3 TWA LMPE-PPT	20 mg/m^3 STEL [LMPE-CT]
Silica compound	Trade Secret	
OSHA (US):	20 mppcf TWA; ((80)/(% SiO2) mg/m^3 TWA)	
Mexico:	10 mg/m^3 TWA LMPE-PPT	
Carbon compound	Trade Secret	
ACGIH:	3 mg/m^3 TWA inhalable fraction	
NIOSH:	3.5 mg/m^3 TWA; 0.1 mg/m^3 TWA (Carbon black in presence of Polycyclic aromatic hydrocarbons) as PAH	
	1750 mg/m^3 IDLH	
OSHA (US):	3.5 mg/m^3 TWA	
Mexico:	3.5 mg/m^3 TWA LMPE-PPT	7 mg/m^3 STEL [LMPE-CT]
Silica, crystalline	14808-60-7	

ACGIH:	0.025 mg/m^3 TWA respirable fraction	
NIOSH:	0.05 mg/m^3 TWA respirable dust	50 mg/m^3 IDLH respirable dust
OSHA (US):	((30)/(%SiO2 + 2) mg/m^3 TWA) total dust; ((250)/(%SiO2 + 5) mppcf TWA) respirable fraction; ((10)/(%SiO2 + 2) mg/m^3 TWA) respirable fraction	
Mexico:	0.1 mg/m^3 TWA LMPE-PPT respirable fraction	

Biological limit value
There are no biological limit values for any of this product's components.

Engineering Controls
Provide local exhaust ventilation system. Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eye/face protection
Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Skin Protection
Wear chemical resistant clothing and rubber boots when potential for contact with the material exists. Recommended material: protective skin cream.

Respiratory Protection
A NIOSH approved air-purifying respirator with an appropriate cartridge or canister may be appropriate under certain circumstances where airborne concentrations are expected to exceed exposure limits.

Glove Recommendations
Wear appropriate chemical resistant gloves.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	gray viscous liquid	**Physical State**	liquid
Odor	mild, solvent	**Color**	gray
Odor Threshold	Not available	**pH**	Not available
Melting Point	Not available	**Boiling Point**	119 - 141 °C (246-286 °F)
Freezing point	Not available	**Evaporation Rate**	3.5
Boiling Point Range	Not available	**Flammability (solid, gas)**	Not available
Autoignition	246 °C (475 °F)	**Flash Point**	10 °C (50 °F)
Lower Explosive Limit	0.9 %	**Decomposition**	Not available
Upper Explosive Limit	6.7 %	**Vapor Pressure**	11.25 mmHg
Vapor Density (air=1)	4	**Specific Gravity (water=1)**	Not available
Water Solubility	0.5	**Partition coefficient: n-octanol/water**	Not available
Viscosity	1200000 cps	**Solubility (Other)**	hydrocarbons

Density	1.2 - 1.3 (relative)	**VOC**	250 g/L

Other Information
No additional information available.

Section 10 - STABILITY AND REACTIVITY

Reactivity
No reactivity hazard is expected.

Chemical Stability
Stable under normal conditions of use.

Possibility of Hazardous Reactions
Hazardous polymerization will not occur.

Conditions to Avoid
Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Incompatible Materials
Strong oxidizing agents, acids, bases.

Hazardous decomposition products
Oxides of carbon, aldehydes

Section 11 - TOXICOLOGICAL INFORMATION

Information on Likely Routes of Exposure

Inhalation
May cause drowsiness or dizziness.

Skin Contact
Causes skin irritation.

Eye Contact
May cause eye irritation.

Ingestion
May cause gastrointestinal irritation.

Acute and Chronic Toxicity

Component Analysis - LD50/LC50
The components of this material have been reviewed in various sources and the following selected endpoints are published:
Carbon compound (Trade Secret)
Oral LD50 Rat >8000 mg/kg

Polyphenol antioxidant (Trade Secret)
Oral LD50 Rat >5000 mg/kg
Dermal LD50 Rabbit >5000 mg/kg

Severely hydrotreated paraffinic oil (Trade Secret)
Oral LD50 Rat >5000 mg/kg
Dermal LD50 Rabbit >2000 mg/kg

Polybutene (Trade Secret)
Oral LD50 Rat >34600 mg/kg
Dermal LD50 Rat >10250 mg/kg

Solvent naphtha, petroleum, light aliphatic (64742-89-8)
Oral LD50 Rat >2000 mg/kg
Dermal LD50 Rat >2000 mg/kg

Silica, crystalline (14808-60-7)
Oral LD50 Rat 500 mg/kg

Immediate Effects
Causes skin irritation. May cause drowsiness or dizziness. May cause gastrointestinal irritation.

Delayed Effects
No information on significant adverse effects.

Irritation/Corrosivity Data
Causes skin irritation. May cause gastrointestinal irritation.

Respiratory Sensitization
No data available.

Dermal Sensitization
No data available.

Component Carcinogenicity

Silica compound	Trade Secret
IARC:	Monograph 68 [1997] (Group 3 (not classifiable))
Carbon compound	Trade Secret
ACGIH:	A3 - Confirmed Animal Carcinogen with Unknown Relevance to Humans
IARC:	Monograph 93 [2010]; Monograph 65 [1996] (Group 2B (possibly carcinogenic to humans))
DFG:	Category 3B (could be carcinogenic for man, inhalable fraction)
OSHA:	Present
Silica, crystalline	14808-60-7
ACGIH:	A2 - Suspected Human Carcinogen
IARC:	Monograph 100C [2012]; Monograph 68 [1997] (Group 1 (carcinogenic to humans))
NTP:	Known Human Carcinogen (respirable size)

DFG:	Category 1 (causes cancer in man, alveola fraction)
OSHA:	Present (respirable size)

Germ Cell Mutagenicity
No data available.

Reproductive Toxicity
No data available.

Specific Target Organ Toxicity - Single Exposure
May affect the central nervous nervous system: drowsiness, dizziness.

Specific Target Organ Toxicity - Repeated Exposure
No target organs identified.

Aspiration hazard
No data available.

Medical Conditions Aggravated by Exposure
No data available.

Additional Data
This product contains crystalline silica, which is a known carcinogen. However, this component is bound by the polymer portion of the sealant. The only way this component would be released is through incineration. Therefore, this product is not considered a carcinogen.

Section 12 - ECOLOGICAL INFORMATION

Ecotoxicity
Avoid release to the environment.

Component Analysis - Aquatic Toxicity

Polyphenol antioxidant	Trade Secret
Fish:	LC50 96 h Oncorhynchus mykiss >0.2 mg/L [semi-static]
Algae:	EC50 72 h Pseudokirchneriella subcapitata >0.2 mg/L IUCLID
Invertebrate:	EC50 48 h Daphnia magna >0.2 mg/L IUCLID
Severely hydrotreated paraffinic oil	Trade Secret
Fish:	LC50 96 h Oncorhynchus mykiss >5000 mg/L
Invertebrate:	EC50 48 h Daphnia magna >1000 mg/L IUCLID
Polybutene	Trade Secret
Fish:	Fish LC50 96 hr >1000 mg/L

Solvent naphtha, petroleum, light aliphatic	64742-89-8
Algae:	EC50 72 h Pseudokirchneriella subcapitata 4700 mg/L IUCLID
Hydrous clay	Mixture
Fish:	Fish LC50 96 hr Oncorhynchus 19000 mg/L

Persistence and Degradability
No information available for the product.

Bioaccumulative Potential
No information available for the product.

Mobility
No information available for the product.

Other Toxicity
No additional information available.

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods
Dispose of contents/container in accordance with local/regional/national/international regulations.

Section 14 - TRANSPORT INFORMATION

US DOT Information:
Shipping Name:ADHESIVES
Hazard Class: 3
UN/NA #: UN1133
Packing Group: II
Required Label(s): < 0.3 gal use Limited Quantity Label

IATA Information:
Shipping Name:ADHESIVES
Hazard Class: 3
UN#: UN1133
Packing Group: II
Required Label(s): < 0.3 gal use Limited Quantity Label

TDG Information:
Shipping Name:ADHESIVES
Hazard Class: 3
UN#: UN1133
Packing Group: II

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations
None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA Section 311/312 (40 CFR 370 Subparts B and C)
Acute Health: Yes **Chronic Health:** Yes **Fire:** Yes **Pressure:** No **Reactivity:** No

U.S. State Regulations
The following components appear on one or more of the following state hazardous substances lists:

Component	CAS	CA	MA	MN	NJ	PA
Calcium carbonate	1317-65-3	No	Yes	Yes	Yes	Yes
Silica compound	Trade Secret	No	Yes	Yes	Yes	Yes
Carbon compound	Trade Secret	Yes	Yes	Yes	Yes	Yes
Silica, crystalline	14808-60-7	No	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):
WARNING! This product contains a chemical known to the state of California to cause cancer

Carbon compound	Trade Secret
Carc:	carcinogen , initial date 2/21/03 (airborne, unbound particles of respirable size)
Silica, crystalline	14808-60-7
Carc:	carcinogen , initial date 10/1/88 (airborne particles of respirable size)

Canadian WHMIS Ingredient Disclosure List (IDL)
Components of this material have been checked against the Canadian WHMIS Ingredients Disclosure List. The List is composed of chemicals which must be identified on MSDSs if they are included in products which meet WHMIS criteria specified in the Controlled Products Regulations and are present above the threshold limits listed on the IDL

Carbon compound	Trade Secret
	1 %
Silica, crystalline	14808-60-7
	1 %

Component Analysis - Inventory
Calcium carbonate (1317-65-3)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX

Yes	NSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Silica compound (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Carbon compound (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Polyphenol antioxidant (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	No

Severely hydrotreated paraffinic oil (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	No

Polybutene (Trade Secret)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Solvent naphtha, petroleum, light aliphatic (64742-89-8)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

Hydrous clay (Mixture)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	No	Yes	Yes	No	No	Yes	No	Yes	Yes	Yes

Silica, crystalline (14808-60-7)

US	CA	EU	AU	PH	JP - ENCS	JP - ISHL	KR - KECI/KECL	KR - TCCA	CN	NZ	MX
Yes	DSL	EIN	Yes	Yes	Yes	No	Yes	No	Yes	Yes	Yes

Section 16 - OTHER INFORMATION

HMIS Rating

Health: 2 Fire: 3 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

NFPA Ratings

Health: 2 Fire: 3 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Summary of Changes
Revision Date: January 24, 2019
Revision Note: General Update

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:
The information contained herein is based upon data and information available to us, and reflects our best professional judgment. This product may be formulated in part with components purchased from other companies. No warranty of merchantability, fitness for any use, or any other warranty is expressed or implied regarding the accuracy of such data or information. The results to be obtained from the use thereof, or that any such use does not infringe any patent, since the information contained herein may be applied under conditions of use beyond our control and with which we may be unfamiliar, we do not assume responsibility for the results of such application. This information is furnished upon the condition that the person receiving it shall make his own determination of the suitability of the material for his particular use.

Section 1 - PRODUCT AND COMPANY IDENTIFICATION

Material Name: White One-Part Pourable Sealer
Chemical Family: Mixture
Product Use: Moisture cure sealant.
Restrictions on Use: For industrial use only.

Manufacturer Information

Carlisle SynTec
1285 Ritner Highway
Carlisle, PA 17013
USA
Phone: +1-800-479-6832
Emergency Phone #: +1-800-424-9300 (CHEMTREC)

Section 2 - HAZARDS IDENTIFICATION

Classification in accordance with paragraph (d) of 29 CFR 1910.1200.
Hazardous classification: Irritant Category 2

GHS Label Elements

Symbol(s)

Signal Word: Warning

Hazard Statement(s)
H315 Causes skin irritation
H317 May cause allergic skin reaction
H318 Causes serious eye damage

Precautionary Statement(s)
P273 Avoid release into the environment
P280 Wear protective gloves/protective clothing/eye protection
P302+P352 IF ON SKIN: Wash with plenty of soap and water.
P305 + P351 IF IN EYES: Rinse cautiously with water for several minutes.
P338 Remove contact lenses, if present and easy to do. Continue rinsing.
P501 Dispose of contents/container in accordance with local regulation.

R-Phrases
R38 Irritating to skin.
R41 Risk serious damage to eyes.
R43 May cause sensitization by skin contact.
S-Phrases
S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S39 Wear eye/face protection.
Carcinogenity: This product contains no ingredient listed as a carcinogen on California Proposition 65 list.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component Name	Percent
1760-24-3	Amino Silane	1-3

Section 4 - FIRST AID MEASURES

Inhalation
An unlikely route of entry. Remove to fresh air. Consult a physician.

Skin
Clean product from affected area with Ethyl alcohol, then wash with soap and water.

Eyes
Flush with large amounts of water for at least 15 minutes. Consult a Physician if ill effects or irritation occurs.

Ingestion
An unlikely route of entry. Consult a physician.

Section 5 - FIRE FIGHTING MEASURES

Extinguishing Media

Water, CO2, Dry Chemical, Foam.

Unusual Fire and Explosion Hazards: None

Flashpoint: N/A**.**

Upper Flammability Limit: N/A

Lower Flammability Limit: N/A

Auto Ignition Temperature: N/A

Sensitivity to Impact: N/A

Sensitivity to Static Discharge: N/A

Hazardous Combustion Products: Thermal decomposition may produce toxic fumes of Carbon Monoxide, Carbon dioxide, Sulfur oxides and Hydrogen sulfide.

Section 6 - ACCIDENTAL RELEASE MEASURES

Handling Precautions: Wear personal protective clothing and equipment, see Section 8. Avoid eye, skin and clothing contact.

Cleanup: Collect spill with absorbent material such as cardboard, allow to cure and place into a container approved for waste disposal.

Regulatory Requirements: Follow applicable OSHA regulations (29 CFR 1910.120).

Section 7 - HANDLING AND STORAGE

Handling Precautions: Use personal protection recommended in section 8. Avoid eye, skin and clothing contact.

Prevention of Fires and Explosions: Product is not considered flammable under normal conditions, and product is not considered explosive.

Storage Requirements: Store in a cool dry area (this product polymerizes when in contact with moisture.)

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

Eye/face protection: Wear safety glasses or goggles to avoid eye contact.

Skin Protection: Wear appropriate work clothing. Wear protective shoes. Recommended material: protective skin cream.

Environmental Exposure Control: No specific controls are needed.

Hand Protection: Wear impervious gloves such as vinyl to minimize contact with skin.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Paste, mild mint scent	**Physical State**	Water Solubility: Insoluble
Odor Threshold	N/A	**pH**	N/A
Melting Point	N/A	**Flash Point**	N/A
Freezing point	N/A	**Flash Point Method**	Based on FP of the most volatile component
Autoignition	N/A	**Vapor Pressure**	<1
Lower Explosive Limit	N/A	**Specific Gravity (water=1)**	1.39
Upper Explosive Limit	N/A	**% Volatile**	1.07%
Vapor Density (air=1)	>1	**VOC**	14.9 g/l
Density	11.59 lbs./gal. (calculated)		

Other Information
No additional information available.

Section 10 - STABILITY AND REACTIVITY

Chemical Stability
Stable under normal conditions of use.

Conditions to Avoid
None Known

Incompatible Materials
None Known

Hazardous decomposition products
Thermal decomposition may produce toxic fumes of Carbon Monoxide (CO) and/or Carbon Dioxide (CO2)

Section 11 - TOXICOLOGICAL INFORMATION

Amino Silane (Refer to sections 2 and 3)

Oral: LD50 > 2,000 mg/kg. Remark: Very low order of toxicity.
Skin Absorption: LD50 > 2,000 mg/kg. Remark: Very low order of toxicity.
Inhalation: LC50 Not acutely Toxic.

Skin Direct Contact: Slight irritation

Eye Direct Contact: Severe irritation. Remark: Causes corneal injury.

Exposure Limits: Not applicable

Sensitization: No

Reproductive Toxicity: No

Mutagenicity: No

Teratogenicity: No

Synergistic Products: None

Section 12 - ECOLOGICAL INFORMATION

No known applicable information.

Section 13 - DISPOSAL CONSIDERATIONS

If this product as supplied becomes a waste, it does not meet the criteria of a hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) 40 CFR 261. This product becomes a firm synthetic rubber when cured. Please allow to cure before disposal.

Section 14 - TRANSPORT INFORMATION

Special shipping information: None

DOT: Not regulated

TDG: Not available

PIN: Not available

Section 15 - REGULATORY INFORMATION

Rotterdam Convention (PIC) Annex III: listed (Tributyl tin compounds (impurities) <2ppm)

U.S. Regulatory information

OSHA 29 CFR 1910-1200 – Irritant.

TSCA – All components of this product are listed on TSCA Inventory.

CERCLA Reportable Quantity – Not applicable.

SARA Title III:

Section 302 Extremely Hazardous Substances – None.

Section 304 – Not applicable.

Section 311/312 – Immediate (acute) health hazard.

Section 313 – None.

RCRA – Refer to section 13.

California Proposition 65 Carcinogens: This product does not contain any chemicals known by the State of California to cause cancer.

California Proposition 65 Reproductive Toxins: This product does not contain any chemicals known by the State of California to cause reproductive harm.

Canadian WHMIS Classification- D2B

Section 16 - OTHER INFORMATION

HMIG Rating
Health: 1 Fire: 0 Reactivity: 0
Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic hazard

Summary of Changes
Revision Date: July 9, 2019
Revision Note: General Update

Key / Legend
ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CLP - Classification, Labelling, and Packaging; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSD - Dangerous Substance Directive; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency

for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LLV - Level Limit Value; LOLI - List Of LIsts™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; REACH- Registration, Evaluation, Authorisation, and restriction of Chemicals; RID - European Rail Transport; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States.

Other Information

Disclaimer:

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