

SECTION 07 56 00
FLUID-APPLIED ROOFING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. This section specifies a fluid applied roofing system consisting of a fluid application of multiple layers of neoprene and chlorosulfonated polyethylene (CSPE).
- B. The Fluid Applied Roofing system is specified for the repair and relining of the existing integral gutter system installed on all roofs of all buildings in this project.
- C. The BASIS OF DESIGN for this fluid applied roof system is the Sika Corporation system **Sikalastic - 641 Lo-VOC Roofing System. The system shall employ 4 layers - Primer Coat, Base Coat, Reinforcement layer, and top coat.**

1.2 QUALITY ASSURANCE

- A. Manufacturer's Qualifications: Obtain products from single manufacturer or from sources recommended by manufacturer for use with fluid applied roofing and incorporated in manufacturer's warranty.
- B. Installers Qualifications: Work is to be performed by installer having three (3) years' experience for work relating to this section and approved in writing by fluid applied roofing manufacturer.
- C. The Contractor shall use one manufacturer for all products for the gutter repair including sealant and membrane. Entire system shall be covered under one warranty.

1.3 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Samples:
 - 1. 150 mm (6 inch) square cured sheet of roofing system without backing, showing color, and texture.
 - 2. System proposed for flashing and reinforcing.
- C. Manufacturer's Certificates:
 - 1. Installer approval.
 - 2. Certificate stating that material utilized on the job will be of the same formulation as materials covered by the test report.

D. Manufacturer's Literature and Data:

1. Roofing system materials giving physical properties, wet mil thickness in relation to dry mil thickness, and other related information.
2. Manufacturer's printed instructions for application of roofing materials to be installed.

E. Test Reports: Test report from an independent commercial testing laboratory showing that neoprene and CSPE materials meet specified requirements.

F. Manufacturer warranty.

1.4 PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Deliver materials to job site in manufacturer's original factory sealed containers labeled to identify product, manufacturer and point of manufacture.
- B. Observe precautions appropriate to flammable materials and "safety notes" included in roofing material manufacturer's printed instructions to installer before, during, and immediately following application of these materials.

1.5 JOB CONDITIONS

- A. Install fluid applied roofing only on dry surfaces free of water, surface condensation, rain, snow, ice, frost, dirt and debris.
- B. Exposed gutter surfaces shall be lightly sanded to remove any patina that has built up on the copper surface. 60-80 grit sandpaper with a sanding block or orbital sander should be used.
- C. Do not proceed when temperature of surfaces to receive roofing and flashing, is lower than 5 degrees C (40 degrees F).
- D. Complete work on roof deck and install penetrations and projections through roof deck before roofing and flashing work is applied.

1.6 WARRANTY

- A. Construction Warranty: Comply with FAR clause 52.246-21 "Warranty of Construction".
- B. Manufacturer Warranty: Manufacturer shall warranty their fluid applied roofing for a minimum of ten (10) years from date of installation and final acceptance by the Government. Submit manufacturer warranty.

1.7 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. ASTM International (ASTM):
 - D3468/D3468M-99(2020)...Liquid-Applied Neoprene and Chlorosulfonated Polyethylene Used In Roofing and Waterproofing
 - D412-16.....Vulcanized Rubber and Thermoplastic Elastomers-Tension
 - D750-12(2017).....Rubber Deterioration in Carbon-Arc Weathering Apparatus
 - D1149-07(2012).....Rubber Deterioration-Surface Ozone Cracking in a Chamber
 - E96/E96M-16.....Water Vapor Transmission of Materials

PART 2 - PRODUCTS

2.1 FLUID APPLIED MEMBRANE WATERPROOFING SYSTEM FOR INTEGRAL GUTTERS

- A. Fluid applied system consisting of primer coat, base coat, mesh reinforcing, and a continuous finish(top) coat is to be installed in all existing integral gutter installed on the roofs as indicated in the Contract Documents.
- B. Contractor shall use one manufacturer's complete system for all integral gutter on all buildings in this project scope.
- C. Basis of design Sika Corporation - Sikalastic 641 Lo-VOC Roofing System.
- D. GC to perform an on-site test application in a 5'-0" length of gutter to confirm final color. (GC to confirm with VA COR before ordering product)

2.2 CAULKING COMPOUND

- A. A non-staining, cold setting, flexible sealant having a polychloroprene or chlorosulfonated polyethylene base with added plasticizers, curing agents, pigments and which contains no volatile oils or other ingredients that will stain applied CSPE roofing.

2.3 REINFORCING TAPE

- A. Unwoven glass mat with nominal 0.46 mm (18 mils) film bonded with neoprene; or a 0.38 mm (15 mils) neoprene impregnated inorganic felt;

or an untreated woven glass fiber tape, plain weave, weight 200 grams per square meter (6 ounces per square yard), thread count 42 by 32.

- B. In lieu of reinforcing tape, loose glass fibers embedded in liquid neoprene are as the reinforcing medium.

2.4 SOLVENT

- A. For use in job site preparation of neoprene primer, for cleanup and other related work, furnish a commercial grade xylene (xylol) or commercial grade toluene (toluol).

2.5 UNDERLAYMENT

- A. Provide level coat and underlayment materials compatible with and as recommended by manufacturer of roofing materials.
- B. Provide level coat and underlayment materials when necessary to provide a suitable base for application of the roofing materials.

PART 3 - EXECUTION

3.1 PREPARATION OF SURFACE

- A. Verify that surfaces to receive roofing and flashing are in sound condition and free of projections, depressions, grease, oil, asphalt, tar, paint, wax, dust, or other debris that may prevent proper application of roofing.
- B. Allow concrete surfaces to cure a minimum of 28 days and clean free of waterproofing agents, form release agents, and curing agents that might act as bond breakers. Proceed only when maximum moisture content of the substrate as measured with a moisture meter is 16 percent.
- C. Report adverse roof deck conditions of any type in writing to Contracting Officer Representative (COR) before material is applied. Commencement of work constitutes acceptance of roof surfaces by installer as satisfactory for application of roofing and flashing.

3.2 CLEANING

- A. Broom-clean surfaces to remove all dust, dirt, loose aggregate, and other foreign particles. Remove excessive alkaline efflorescence on concrete by flushing with 10 percent muriatic acid solution, then rinsing, and allowing to dry.

3.3 APPLICATION

- A. Install roofing with tools and equipment approved by roofing material manufacturer. Wet film thickness of roofing materials to be as recommended by roofing material manufacturer to obtain the specified

dry film thickness. Check wet film thickness frequently by use of a wet mil thickness gauge. Control application of fluid-applied material by maintaining careful balance at all times between material consumption and area covered. Apply quantity of coats to achieve minimum dry film thickness of neoprene and CSPE materials.

B. Joint Treatment:

1. Treat hairline cracks or other openings up to 2 mm (1/16 inch) in width with a brush coat of neoprene base fibered sealer.
2. Openings larger than 2 mm (1/16 inch) but less than 6 mm (1/4 inch) fill and treat with a reinforcing tape as specified.
3. Cracks 6 mm (1/4 inch) and over treat as specified for expansion joints.

C. Drains: Cut elastic base sheet to fit around drains/downspouts and extend the same sheet horizontally in gutter a minimum the manufacturers installation instructions from edge of all drains. Do not clamp rings or strainers until 48 hours after entire roofing application is complete.

D. Priming: Immediately after substrate has been thoroughly cleaned and ready for application of the roof, prime concrete surfaces to receive roofing and flashing with neoprene or chlorinated rubber based primer.

E. Finish coat per manufacturers installation instructions; Basis of design Sika Corporation - Sikalastic 641 Lo-VOC-Roofing System.

3.4 PROTECTION AND CLEAN UP

- A. Keep completed roofing system free of non-essential traffic and unrelated work until at least 48 hours after completion of roofing application.
- B. Provide temporary support, such as insulation board, for materials and equipment stored on roof during application.
- C. Protect adjacent construction from disfiguration by run, spillage or overspray, and repair work defaced in this manner.
- D. Remove tools, equipment and surplus materials and clear roof area of debris on completion of work.

3.5 REPAIRS

- A. Repair damage to roofing and flashing before work is complete. Patch breaks in surface with neoprene-based base course and CSPE-base weather course application to insure a continuous waterproof membrane complying with these specifications.

- - - E N D - -

Coatesville VAMC
Replace Pitched Roof Building 1
Coatesville, PA

January 7, 2025
VA #542-25-105

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SYSTEM DATA SHEET

Sikalastic®-641 Lo-VOC Roofing System

Liquid applied single component fully reinforced Lo-VOC, low-odor roofing system with fiberglass or polyester reinforcement

PRODUCT DESCRIPTION

Sikalastic®-641 Lo-VOC Roofing System combines cold applied, aliphatic, single component, moisture-triggered polyurethane resin with fiberglass mat or polyester fleece reinforcement to create a seamless membrane and flashing system.

System components are:

Sika® or Sikalastic® Primer: Select primer per substrate material in accordance with Priming Guide

Sikalastic®-641 Lo-VOC: Resin used for all systems with Sika Reemat or Sika Fleece reinforcements

Sika® Reemat: Chopped strand fiberglass mat

Sika® Fleece 120, 140, 170: Non-woven, needle-punched polyester fleece in various weights

USES

Sikalastic®-641 Lo-VOC roofing/waterproofing systems may only be used by experience professionals.

- Sikalastic® RoofPro 10, 15, 20 and 25 year systems, including Sikalastic® RoofPro Built Up, Direct, Plaza Deck/PMA, and Vegetated systems for both new construction and refurbishment
- Ideal for roofs displaying complex details and geometry or when accessibility is limited
- Effective and cost efficient life cycle extension of existing roofs
- Highly reflective Sikalastic®-641 Lo-VOC in White suitable for cool roofs and solar roof assemblies
- Suitable for use for applications such as balconies, terraces, walkways, plazas, and similar applications exposed to foot traffic when provided with a supplemental aggregated surfacing

CHARACTERISTICS / ADVANTAGES

- Proven technology with over 30 year track record
- Single component - no mixing and ready to use
- Fully reinforced with highly conformable Sika Reemat or Sika Fleece
- Moisture triggered chemistry that is rapidly weatherproof after application
- Resistant to ponding water
- Low VOC formula - low Odor
- Highly elastic and crack bridging
- Seamless and fully adhered
- Vapor permeable
- UV resistant and non-yellowing
- Abrasion and chemical resistant
- Adheres to most common construction materials when suitable primer is used

ENVIRONMENTAL INFORMATION

- Environmental Product Declaration (EPD) - Cradle-to-Grave

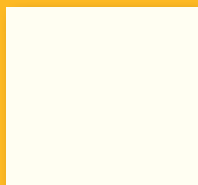
APPROVALS / STANDARDS

- FM Approval Standard 4470 for Class 1 Roof Covers
- UL 790 Class A
- Miami-Dade
- ASTM D 6083
- ASTM E 108
- Florida Building Code

SIKALASTIC® ROOFPRO COLOR CHART

ALL COLORS ARE AVAILABLE IN 5-GAL PAILS UNLESS OTHERWISE NOTED

Sikalastic®-644 Lo-VOC a selection of 3 standard colors are available with no minimum order quantity



***White**



***Standard Gray**

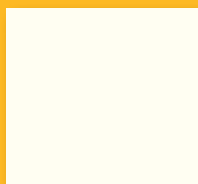


Pearl Gray
(Made to Order)

***50 Gallon Drums Available**

- White
- Standard Gray

Sikalastic®-641 Lo-VOC a selection of 6 standard colors are available with no minimum order quantity



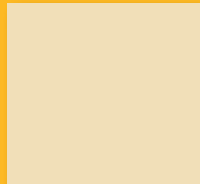
***White**



***Standard Gray**



Pearl Gray



Mushroom



Copper Green

***50 Gallon Drums Available**

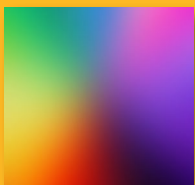
- White
- Standard Gray

****Custom Colors**

- Available as Made to Order
- 5-gal pails only
- 120 pail minimum order

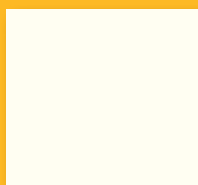


Steel Gray



****Custom Colors**

Sikalastic® -621 TC a selection of 3 standard colors are available with no minimum order quantity (can receive textured and decorative finishes)



White



Steel Gray



Pearl Gray

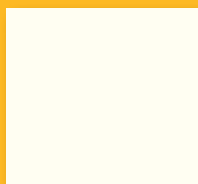


****Custom Colors**

****Custom Colors**

- Available as Made to Order
- 5-gal pails only
- 120 pail minimum order

Sikalastic® -624 WP a selection of 2 standard colors are available with no minimum order quantity (can receive textured and decorative finishes)



White



Pearl Gray

NOTE:

Colors show approximate tone without any texture. Color of actual product may vary slightly. Gloss level will vary depending on product used. Custom colors available with adequate lead time and minimum batch quantities. Please consult your Sika® representative for further information and pricing.



SIKA CORPORATION • ROOFING

East Tel: 888-552-9769 West Tel: 888-509-3350

usa.sika.com

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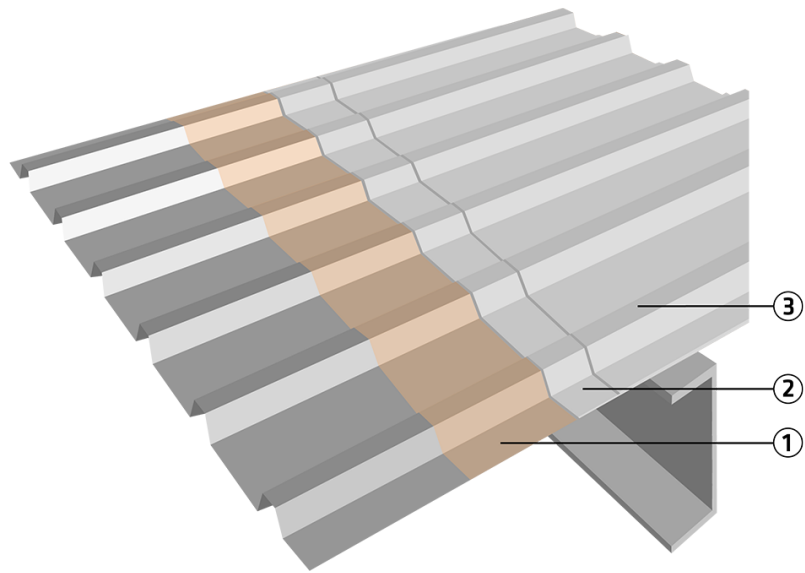
BUILDING TRUST



SYSTEM INFORMATION

System Structure

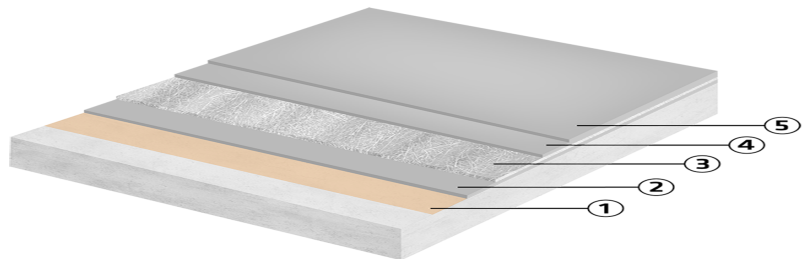
Sikalastic® RoofPro-641 Lo-VOC System Guide with Sika® RoofPro Metal



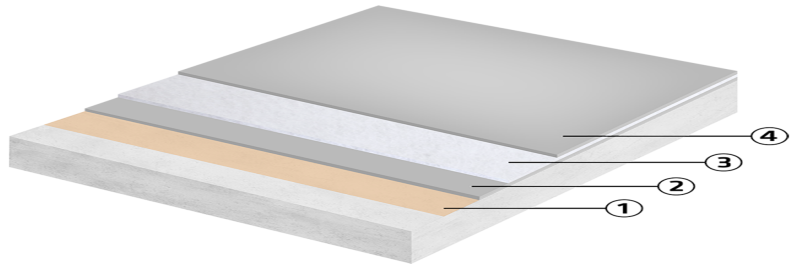
	RoofPro Metal*
1. Primer	See Priming Guide
2. Base Layer: Sikalastic®-641 Lo-VOC	20 mils wet–80 sf/gal.
3. Top Layer: Sikalastic®-641 Lo-VOC	20 mils wet–80 sf/gal.

* Detailing: Sika® Flexitape Heavy or Sika® Joint Tape SA centered over seams, transitions and properly treated cracks and joints.

Sikalastic® RoofPro-641 Lo-VOC System Guide with Sika® Reemat



	RoofPro 10**	RoofPro 15**	RoofPro 20**	RoofPro 25**
1. Primer	See Priming Guide	See Priming Guide	See Priming Guide	See Priming Guide
2. Base Layer: Sikalastic®-641 Lo-VOC	30 mils wet 53 sf/gal.	50 mils wet 32 sf/gal.	50 mils wet 32 sf/gal.	50 mils wet 32 sf/gal.
3. Reinforcement:	Sika® Reemat Standard	Sika® Reemat Premium	Sika® Reemat Premium	Sika® Reemat Premium
4. Top Layer: Sikalastic®-641 Lo-VOC	30 mils wet 53 sf/gal.	20 mils wet 80 sf/gal.	30 mils wet 53 sf/gal.	23 mils wet 69 sf/gal.
5. Top Layer: Sikalastic®-641 Lo-VOC				23 mils wet 69 sf/gal.



	RoofPro 15**	RoofPro 20**	RoofPro 25**
1. Primer	See Priming Guide	See Priming Guide	See Priming Guide
2. Base Layer: Sikalastic®-641 Lo-VOC	45 mils wet 35 sf/gal.	50 mils wet 32 sf/gal.	66 mils wet 24 sf/gal.
3. Reinforcement:	Sika® Fleece 120 (US)	Sika® Fleece 140 (US)	Sika® Fleece 170 (US)
4. Top Layer: Sikalastic®-641 Lo-VOC	25 mils wet 64 sf/gal.	30 mils wet 53 sf/gal.	34 mils wet 47 sf/gal.

** Substrates: Concrete or cementitious, metals, woods, single-ply or bituminous, stone. Primer required (see Substrate Priming Guide). Detailing: Sika® Flexitape Heavy or Sika® Joint Tape SA centered over seams, transitions and properly treated cracks and joints.

Note: Coverage rates provided are optimal and are not guaranteed - coverage rates will vary depending on temperature, surface roughness and porosity, aggregate selection and embedment, and application technique. For example, using Sikalastic®-641 Lo-VOC Roofing System with Sika® Fleece 140 in a RoofPro 20 build up, a potential full system coverage rate for a mod-bit surface could be 14 - 16 sf/gal.. Sikalastic®-641 Lo-VOC Roofing System with Sika Reemat Premium in a RoofPro 15, 20 & 25 build up, a potential base coat coverage rate could be 25 - 28 sf/gal.

Composition	Single component, moisture-triggered, aliphatic polyurethane			
Color	White, Standard Gray, Pearl Gray, Steel Gray, Mushroom, Copper Green; custom colors available with minimum order quantity			
Dry film thickness	<div>Sikalastic® RoofPro-641 Lo-VOC System Guide with Sika® RoofPro Metal</div> <div><div>RoofPro Metal</div><div>36 mils dry</div></div>			
	<div>Sikalastic® RoofPro-641 Lo-VOC System Guide with Sika® Reemat</div> <div><div>RoofPro 10</div><div>RoofPro 15</div><div>RoofPro 20</div><div>RoofPro 25</div></div> <div><div>53 mils dry</div><div>62 mils dry</div><div>71 mils dry</div><div>85 mils dry</div></div>			
	<div>Sikalastic® RoofPro-641 Lo-VOC System Guide with Sika® Fleece</div> <div><div>RoofPro 15</div><div>RoofPro 20</div><div>RoofPro 25</div></div> <div><div>62 mils dry</div><div>71 mils dry</div><div>89 mils dry</div></div>			

TECHNICAL INFORMATION

Resistance to Static Puncture	Sikalastic® RoofPro 20 with Sika® Reemat Premium	Sikalastic® RoofPro 20 with Sika® Fleece 140	(ASTM D-5602)
	> 55 lbf	> 55 lbf	
Note: Data for other RoofPro assemblies available upon request			
Tensile Strength	Sikalastic® RoofPro 20 with Sika® Reemat Premium	Sikalastic® RoofPro 20 with Sika® Fleece 140	(ASTM D-751 Proc. B)
	1030 psi	900 psi	
	Note: Data for other RoofPro assemblies available upon request		
	Sikalastic® RoofPro 20 with Sika® Reemat Premium		(ASTM D-751 Proc. B)
	1030 psi		
	Sikalastic® RoofPro 20 with Sika® Fleece 140		(ASTM D-751 Proc. B)
	900 psi		
Tear Strength	Sikalastic® RoofPro 20 with Sika® Reemat Premium	Sikalastic® RoofPro 20 with Sika® Fleece 140	(ASTM D-624)
	300 lbf/in	200 lbf/in	
Note: Data for other RoofPro assemblies available upon request			
Elongation at Break	Sikalastic® RoofPro 20 with Sika® Reemat Premium	Sikalastic® RoofPro 20 with Sika® Fleece 140	(ASTM D-751)
	21 %	82 %	
Note: Data for other RoofPro assemblies available upon request			
External Fire Performance	Class A		(ASTM E-108)
Chemical Resistance	Strong resistance to a wide range of reagents, including paraffin, gasoline, fuel oil, white spirit, acid rain, detergents and moderate solutions of acids and alkalis. Some low molecular weight alcohols can soften the material. Contact Technical Service for specific recommendations.		
Artificial Ageing	5,000 hours under UV light, no cracking or crazing		(ASTM C-1442)
Solar Reflectance	86.8 %	(ASTM C-1549)	(White)
	57.6 %		(Pearl Gray)
	37.5 %		(Standard Gray)
	12.0 %		(Steel Gray)
	56.5 %		(Mushroom)
Solar Reflectance Index	108	(ASTM E-1980)	(White)
Thermal Emittance	0.90	(ASTM C-1371)	(White)
	0.91		(Pearl Gray)
	0.91		(Standard Gray)
	0.91		(Steel Gray)
	0.91		(Mushroom)
Service Temperature	-22–176 °F (-30–80 °C) intermittent		

APPLICATION INFORMATION

Ambient Air Temperature	41 °F (5 °C) min. / 95 °F (35 °C) max			
Relative Air Humidity	85 % R.H. max.			
Dew Point	Beware of condensation. The substrate and uncured coating must be ≥ 5 °F (3 °C) above dew point.			
Substrate Temperature	41 °F (5 °C) min. / 140°F (60°C) max.			
Substrate Moisture Content	≤ 4 % moisture content Test method: Sika®-Tramex meter No rising moisture according to ASTM (Polyethylene-sheet)			
Waiting / Recoat Times	Ambient Conditions		Minimum Wait Time To Overcoat	
	+40 °F / 50 % r.h.		18 hours	
	+50 °F / 50 % r.h.		8 hours	
	+70 °F / 50 % r.h.		6 hours	
	*After 7 days the surface must be cleaned and primed with Sika® Concrete Primer Lo-VOC or Sika® Reactivation Primer before continuing. Note: Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.			
Applied Product Ready for Use	Ambient Conditions	Rain Resistant	Touch Dry	Full Cure
	+40 °F / 50 % r.h.	1 hour	12 hours	24 hours
	+50 °F / 50 % r.h.	1 hour	6 hours	18–24 hours
	+70 °F / 50 % r.h.	1 hour	4 hours	12–18 hours
Note: Times are approximate and will be affected by changing ambient conditions particularly temperature and relative humidity.				

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

LIMITATIONS

- Minimum age of concrete must be 28 days depending on curing and drying conditions
- Do not thin with solvents
- Do not store materials outdoors directly exposed to sunlight and moisture. Cover and protect material with breathable type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Observe temperature storage and conditioning requirements
- Do not apply to substrate surfaces where moisture vapor transmission will occur during application and cure. This condition may be checked using ASTM D 4263 (Polyethylene sheet method)
- Substrate must be dry prior to application. Do not apply to a frosted, wet or damp surface. Allow sufficient time for the substrate to dry after rain or inclement weather, as there is the potential for

bonding problems

- On substrates likely to exhibit outgassing apply during falling ambient and substrate temperature. If applied during rising temperature pinholing or blistering may occur
- Use sunglasses with UV filter when applying highly reflective Sikalastic®- 641 Lo-VOC White (RAL 9016).
- Do not use for indoor applications unless sufficient air flow and ventilation are provided to prevent odors and/or vapors from leaving the immediate work area
- Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents or other means of ingress for odors and/or vapors into the building/structure during product application and cure
- For areas with direct exposure to heavy or frequent foot traffic, an additional wear coat protection with slip resistant aggregate is required. Opening to traffic prior to cure may result in loss of aggregate or permanent staining and subsequent premature failure.
- Do not apply cementitious products, such as tile mortar directly onto Sikalastic®- 641 Lo-VOC. See Sikalastic®-624 WP or Sikalastic®-644 Lo VOC Product Data Sheet
- Any repairs required to achieve a level surface must be performed prior to application (consult a Sika

representative for guidance on various product solutions). Surface irregularities may reflect through the cured system

- When applying over existing coatings or membranes compatibility and adhesion testing and subsequent approval by Technical Services is required
- Opening to traffic prior to cure may result in permanent staining and subsequent premature failure
- On grade concrete decks should not be covered with Sikalastic® RoofPro membrane systems
- Unvented metal pan, split/sandwich slab with encapsulated membrane and/or insulation, cinder fill decks, and lightweight insulating concrete deck overlays should not be covered with Sikalastic® RoofPro systems without additional deck evaluation and subsequent approval by Technical Services
- Do not subject to continuous immersion, i.e., fountains, ponds, pools, or interior of tanks
- Not recommended for use over ceramic tile

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

APPLICATION INSTRUCTIONS

Substrate Pre-Treatment

Refer to Priming Guide to select primer for properly evaluated and prepared substrate. Refer to separate primer Product Data Sheet for application methods, coverage rates, cure times and recoat windows. Always allow primer to cure thoroughly before applying detail or base resin layer.

Sikalastic® RoofPro-641 Lo-VOC Priming Guide

Substrates and Primer Options

Concrete *1

Sikalastic® Concrete Primer Lo-VOC
Sikalastic® DTE Primer
Sikalastic® GDC Primer
Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

Lightweight Structural Concrete *1

Sikalastic® Concrete Primer Lo-VOC
Sikalastic® DTE Primer
Sikalastic® GDC Primer
Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

Cement, Gypsum Based Roof Boards

Sikalastic® Concrete Primer Lo-VOC
Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

Brick, Stone *3

Sikalastic® Concrete Primer Lo-VOC
Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

Bituminous Substrate

Asphalt, Bituminous Felts, Bituminous Coatings, Granulated or Smooth SBS & Aged APP Cap Sheets *2,3

Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

Single Ply PVC Membranes *3

Sarnafil, Sikaplan *3
Sikalastic® EP Primer/Sealer

Hypalon *3

Sika® Bonding Primer

TPO, EPDM *3

Sikalastic® EPDM Primer
Sikalastic® EPDM / TPO Primer Lo-VOC

Roof tiles (unglazed) *3,4

Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

Fiberglass *3

Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

Polyurethane Foam - Sprayed or Slab Stock

Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

Metal *3

Aluminium, Galvanized, Cast Iron, Copper, Lead, Brass, Stainless Steel, Steel, Zinc

Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

Pre-Coated Metal *3

Paints & Coatings *3

Aluminized Solar Reflective Coatings *3

Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

Wood - Timber & Plywood *5

Sikalastic® EP Primer/Sealer
Sikalastic® EP Primer Rapid

* Consult Sika

- 1 New cementitious substrates must be Portland base and be cured min. 28 days.
- 2 The presence of volatile bitumen may cause discoloration of Sikalastic® if not properly primed.
- 3 Surface evaluation and field adhesion testing.
- 4 Glazed tile consult Sika.
- 5 Pressure treated lumber consult Sika.

System Data Sheet

Sikalastic®-641 Lo-VOC Roofing System

September 2023, Version 01.12

02091590900000012

SUBSTRATE PREPARATION

Concrete and Cementitious Substrates

New concrete shall be allowed to cure a minimum of 28 days. Concrete shall have a minimum compressive strength of 20.7 MPa (3000 psi) and exhibit a minimum tensile bond strength of 1.4 MPa (200 psi). Moist or sheet curing methods should be used, as opposed to the use of curing compounds, which may interfere with the bond of the membrane. Inspect the concrete, including upstands. All areas should be hammer or chain drag tested. Concrete must be suitably finished, preferably by wood float or steel pan. A power float finish is acceptable where the surface is prepared to avoid laitance (a tamped finish is not acceptable). The surface finish must be uniform and free from defects such as laitance, voids or honeycombing.

Cementitious or mineral based substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and to achieve an open textured surface (CSP 2-4 per ICRI guidelines). Loose friable material and weak concrete must be completely removed and surface defects such as blowholes and voids must be fully exposed. The amount of embedment coat required may increase over rough or highly porous surfaces.

Repairs to the substrate, filling of joints, blowholes/voids and surface levelling must be carried out. Consult Sika for product recommendations based on project requirements. High spots must be removed by grinding or similar method. Outgassing is a naturally occurring phenomenon of concrete that can produce pinholes in liquid applied materials. The concrete must be carefully assessed for moisture content, air entrapment, and surface finish prior to any roofing/waterproofing work. Particular requirements for priming must also be considered. Installing the primer and membrane either when the concrete temperature is falling or stable can reduce outgassing. It is generally beneficial to apply the primer and embedment coat in the late afternoon or evening.

Gypsum and Cement Based Sheathing

Sheathing boards shall be clean, dry, dust free, and shall be properly secured to the structure. Secure loose boards if in sound condition. Damaged or contaminated boards shall be removed and replaced.

Brick and Stone

Mortar joints must be sound and preferably flush pointed. Power wash and use biodegradable non-sudsing detergent with clean water rinse as required.

Asphalt

Asphalt contains volatiles which can cause bleeding and slight non-detrimental staining. The asphalt must be carefully assessed for moisture and/or air entrapment, grade and surface finish. Power wash and use biodegradable non-sudsing detergent with clean water rinse as required. All major cracks should be sealed to allow continuity of the Sikalastic® RoofPro system.

Bituminous Felt

Ensure that bituminous felt is firmly adhered or mechanically fixed to the substrate. Bituminous felt shall not contain badly degraded areas. Power wash and use biodegradable non-sudsing detergent with clean water rinse as required. Treat blisters by star cutting and removing any underlying water. Allow to dry and re-adhere using suitable adhesive.

Bituminous Coatings

Bituminous coatings should not be sticky or mobile. Volatile mastic coatings, or old coal tar coatings are not acceptable. Remove any loose or degraded coatings.

Metals

Metals must be in sound condition. Ferrous metals should be thoroughly cleaned by grinding or blast cleaning prior to priming (SSPC-SP3 to SP11 near-white metal). Non-ferrous metals are prepared by removing any deposits of dust and oxidation and abrading to bright metal. Wire brushing can be used for soft metal such as lead. The surface must be clean and free from grease which, if present, must be removed with a solvent wipe or wash with detergent, rinse and dry. Stainless Steel must be mechanically abraded or ground to create an appropriate anchor profile.

Wooden Substrates

Plywood and timber based roof decks must be in good condition, firmly adhered or mechanically fixed. All plywood should be identified as conforming to PS 1 for construction and industrial plywood by grade, APA (American Plywood Association) trademark, or equivalent. For maximum smoothness, EXT Type APA, Grade A-C should be used, and the "A" side should be positioned to receive the Sikalastic® resin. Plywood decks to receive resin directly shall be at least 1/2" thick

and attached and supported according to APA guidelines, using only non-rusting screw, spiral or coated nail type fasteners. A good practice would be to recess or counter sink fasteners 1/8 to 1/4" and fill with Sikaflex® sealant. Suitable edge support to prevent differential deflection between panels shall be provided. Panel edges shall be tongue and groove or supported on solid blocking. Space panels 1/8 to 3/16" at panel ends. Timber and timber based roof decks require additional reinforcement such as the installation of plywood, approved insulation or cover board. Small timber protrusions and suitable decks may be treated directly, provided that the timber is of exterior quality, i.e. plywood. Fill joints flush with Sikaflex® sealant.

Paints and Coatings

Ensure the existing material is sound and firmly adhered. Remove any loose or degraded coatings. Ensure the surface is clean and free from oxidation, dust, dirt, and debris. Power wash and use biodegradable non-sudsing detergent with clean water rinse as required.

Existing Sikalastic® RoofPro System

The existing Sikalastic® RoofPro System shall be soundly adhered to the substrate. Clean the membrane using a pressure washer at approximately 140bar (2000 psi) and biodegradable non-sudsing detergent with clean water rinse. Allow to dry.

Sikaplan®/Sarnafil® membranes

Clean the membrane using a pressure washer at approximately 140bar (2000 psi) and biodegradable non-sudsing detergent with clean water rinse. Allow to dry.

MIXING

No mixing necessary

APPLICATION

Detailing

Non-structural Cracks Up To 1/16"

Detail application not necessary. Apply embedment/base resin layer per below. Non-structural cracks between 1/16" and 1/4". Rout and seal with Sikaflex® sealant. Apply 40–45 mil resin layer embedded with 3" Sika Flexitape Heavy or use Sika® Joint Tape SA centered over the crack. Apply embedment/base resin layer per instruction.

Cracks and Joints Between 1/4" and 1"

Rout and seal with Sikaflex® sealant. Apply bond breaker tape sufficient to span width of crack or joint followed by 40–45 mil resin layer embedded with 6" Sika® Flexitape Heavy or use Sika® Joint Tape SA centered over crack or joint. Apply embedment/base resin layer by terminating Sika® Reemat or Sika® Fleece at edges of crack or joint overlapping Sika® Flexitape Heavy or Sika® Joint Tape SA, a minimum of 2 inches on both sides of the crack or joint.

Joints Greater Than 1"

Treat as expansion joint. Consult Sika for recommendations.

Metal Seams and Plywood/Cover Board Joints

Apply 40–45 mil resin layer embedded with 3 or 6" Sika® Flexitape Heavy centered over seam. Alternatively Sika® Joint Tape SA can be applied centered over seam. Apply embedment resin layer per instruction.

Transitions Between Dissimilar Materials

Apply 40–45 mil resin layer embedded with Sika® Flexitape Heavy or use Sika® Joint Tape SA centered over transitions or dissimilar materials. Apply embedment resin layer per instruction.

Embedment/Base Resin Layer With Sika® Reemat Reinforcement

Mixing not required. Apply Sikalastic®- 641 Lo-VOC at the coverage rate listed in the RoofPro System Guide using a 1/2" nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should be backrolled prior to embedding Sika® Reemat. Place Sika® Reemat in wet base resin layer overlapping seams a minimum of 2" (place frayed edge over cut edge of roll) and apply wet roller to topside to saturate completely. After approximately 5 minutes the binder will begin to dissolve allowing the fiber strands to conform to irregular surfaces. Do not over work once the fibers have conformed to the substrate. Allow to cure 12 hours at 70 °F and 50 % R.H. or until tack free before top resin layer. Keep clean and dry and apply top resin layer within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika® Concrete Primer Lo-VOC or Sika® Reactivation Primer.

Top Resin Layer With Sika® Reemat Reinforcement

Mixing not required. Apply Sikalastic®- 641 Lo-VOC at the coverage rate listed in the RoofPro System Guide with a 1/2" nap phenolic resin core roller. Material can also be squeegee or spray applied, in which case it should also be backrolled. In the case of RoofPro 25 allow the first top resin layer to cure 12 hours at 70 °F and 50 % R.H. or until tack free before applying second top resin layer. On top of the complete RoofPro system additional resin layers may be applied with aggregate for slip resistance. Keep clean and dry and apply additional resin layers within 7 days. If window is exceeded clean with non-sudsing detergent and clean water rinse, and allow to dry prior to application of Sika® Concrete Primer Lo-VOC or Sika® Reactivation Primer.

Wet On Wet Application With Sika® Fleece Reinforcement

Mixing not required. To primed substrate apply two-thirds of the Sikalastic®- 641 Lo-VOC specified in the RoofPro System Guide with a 1/2" nap phenolic resin core roller. Immediately place specified Sika® Fleece into wet resin overlapping seams a minimum of 3" along the edge and 6" end-to-end. Apply wet roller to topside with light pressure to saturate fleece from bottom and ensure air pockets are completely removed. Immediately apply all of remaining one-third of Sikalastic®- 641 Lo-VOC resin specified in the RoofPro System Guide. Ensure there is an even and complete fleece saturation from the topside.

Aggregated Surfacing

Supplemental aggregate surfacing is required for all applications that will experience direct foot traffic such as balconies, terraces, walkways, and plazas. It is also recommended for areas that experience maintenance foot traffic. The aggregate surfacing is applied in a supplemental resin layer after the Sikalastic membrane has been installed. Aggregate is not applied into the roofing/waterproofing resin.

Seed and Back Roll Option

The Seed and Backroll option is primarily intended for use for maintenance traffic-type applications where enhanced slip resistance is required. Apply Sikalastic®- 641 Lo-VOC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet seed with kiln dried, iron free aggregate. Back roll the surface to encapsulate the aggregate in the Sikalastic resin.

Full Broadcast and Seal Option

The Full Broadcast and Seal option is intended for use for applications where both enhanced slip resistance and physical protection of the roofing membrane is required. Apply Sikalastic®- 641 Lo-VOC resin at 15 mils wet film thickness to the installed, cured membrane system. While the supplemental resin application is still wet broadcast to rejection (full broadcast/beach) with kiln dried, iron free aggregate. Remove excess aggregate after cure. Seal with an additional coat of Sikalastic resin.

Aggregate Selection

Use clean, rounded or semiangular, oven dried quartz sand with a minimum hardness of 6.5 per the Moh's scale. It should be supplied in prepackaged bags and free of metallic or other impurities. The following size gradations are recommended:

- 16–30 or 20–40 mesh for pedestrian traffic systems

CLEANING OF TOOLS

Clean all tools and application equipment with appropriate solvent immediately after use. Hardened and/or cured material can only be removed mechanically.

OTHER RESTRICTIONS

See Legal Disclaimer.

LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

Prior to each use of any product of Sika Corporation, its subsidiaries or affiliates ("SIKA"), the user must always read and follow the warnings and instructions on the product's most current product label, Product Data Sheet and Safety Data Sheet which are available at usa.sika.com or by calling SIKA's Technical Service Department at 1-800-933-7452. Nothing contained in any SIKA literature or materials relieves the user of the obligation to read and follow the warnings and instructions for each SIKA product as set forth in the current product label, Product Data Sheet and Safety Data Sheet prior to use of the SIKA product.

SIKA warrants this product for one year from date of installation to be free from manufacturing defects and to meet the technical properties on the current Product Data Sheet if used as directed within the product's shelf life. User determines suitability of product for intended use and assumes all risks. User's and/or buyer's sole remedy shall be limited to the purchase price or replacement of this product exclusive of any labor costs.

NO OTHER WARRANTIES EXPRESS OR IMPLIED SHALL APPLY INCLUDING ANY WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES. SIKA SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

Sale of SIKA products are subject to the Terms and Conditions of Sale which are available at <https://usa.sika.com/en/group/SikaCorp/termsandconditions.html> or by calling 1-800-933-7452.

Sika Corporation

201 Polito Avenue
Lyndhurst, NJ 07071
Phone: +1-800-933-7452
Fax: +1-201-933-6225
usa.sika.com



System Data Sheet

Sikalastic®-641 Lo-VOC Roofing System
September 2023, Version 01.12
020915909000000012

Sikalastic-641Lo-VOCRoofingSystem-en-US-(09-2023)-1-12.pdf





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SECTION 1. IDENTIFICATION

Product name : Sikalastic®-641 Lo-VOC

Company name : Sika Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

E-mail address : ehs@sika-corp.com

Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: +1-703-527-3887

Recommended use of the chemical and restrictions on use : For further information, refer to product data sheet.

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids : Category 4

Acute toxicity (Inhalation) : Category 4

Skin irritation : Category 2

Eye irritation : Category 2A

Respiratory sensitization : Category 1

Skin sensitization : Category 1

Reproductive toxicity : Category 1B

GHS label elements

Hazard pictograms :  

Signal Word : Danger



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- Hazard Statements** :
- H227 Combustible liquid.
 - H315 Causes skin irritation.
 - H317 May cause an allergic skin reaction.
 - H319 Causes serious eye irritation.
 - H332 Harmful if inhaled.
 - H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 - H360 May damage fertility or the unborn child.
- Precautionary Statements** :
- Prevention:**
- P201 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.
 - P261 Avoid breathing mist or vapors.
 - P264 Wash skin thoroughly after handling.
 - P271 Use only outdoors or in a well-ventilated area.
 - P272 Contaminated work clothing must not be allowed out of the workplace.
 - P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
 - P284 Wear respiratory protection.
- Response:**
- P302 + P352 IF ON SKIN: Wash with plenty of soap and water.
 - P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.
 - 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.
 - P333 + P313 If skin irritation or rash 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/ doctor.
 - P362 + P364 Take off contaminated clothing and wash it before reuse.
 - P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
- Storage:**
- P403 Store in a well-ventilated place.
 - P405 Store locked up.
- Disposal:**
- P501 Dispose of contents/ container to an approved waste dis-



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posal plant.

Additional Labeling

There are no ingredients with unknown acute toxicity used in a mixture at a concentration $\geq 1\%$.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixtures

Components

Chemical name	CAS-No.	Classification	Concentration (% w/w)
4-chloro- α,α,α -trifluorotoluene	98-56-6	Flam. Liq. 3; H226 Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Skin Sens. 1B; H317 STOT SE 3; H335	$\geq 10 - < 20$
barium sulfate	7727-43-7		$\geq 5 - < 10$
Hardener MTJ (Polyoxypropylene-tri(morpholinoaldimine))	1379822-00-0	Skin Sens. 1B; H317	$\geq 5 - < 10$
triphenyl phosphate	115-86-6		$\geq 1 - < 5$
Hardener MI (Isophoronedimorpholinoaldimine)	1217271-02-7	Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Skin Sens. 1; H317	$\geq 1 - < 5$
Isophorondiisocyanate homopolymer	53880-05-0	Skin Sens. 1B; H317 STOT SE 3; H335	$\geq 1 - < 5$
Methyl Acetate Salicylic Acid Blend	Not Assigned	Flam. Liq. 2; H225 Eye Dam. 1; H318 Repr. 2; H361 STOT SE 3; H336	$\geq 1 - < 5$
tris(methylphenyl) phosphate	1330-78-5	Repr. 2; H361	$\geq 0.1 - < 1$
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	Acute Tox. 1; H330 Skin Corr. 1C; H314 Eye Dam. 1; H318 Resp. Sens. 1; H334 Skin Sens. 1; H317 STOT SE 3; H335	$\geq 0.1 - < 1$
Pentamethyl piperidylsebacate	41556-26-7	Skin Sens. 1A; H317 Repr. 2; H361	$\geq 0.1 - < 1$
N-methyl-2-pyrrolidone	872-50-4	Skin Irrit. 2; H315 Eye Irrit. 2A; H319 Repr. 1B; H360D STOT SE 3; H335	$\geq 0.1 - < 1$
4,5-dichloro-2-octyl-2H-isothiazol-3-one (DCOIT)	64359-81-5	Acute Tox. 4; H302 Acute Tox. 2; H330 Skin Corr. 1; H314 Eye Dam. 1; H318	$\geq 0.1 - < 1$



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		Skin Sens. 1A; H317	
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Actual concentration is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice	: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
If inhaled	: Move to fresh air. Consult a physician after significant exposure.
In case of skin contact	: Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. If symptoms persist, call a physician.
In case of eye contact	: Immediately flush eye(s) with plenty of water. Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person. Obtain medical attention.
Most important symptoms and effects, both acute and delayed	: irritant effects sensitizing effects toxic effects for reproduction Asthmatic appearance Respiratory disorder Allergic reactions Excessive lachrymation Erythema Headache Dermatitis Causes skin irritation. May cause an allergic skin reaction. Causes serious eye irritation. Harmful if inhaled. May cause allergy or asthma symptoms or breathing difficulties if inhaled. May damage fertility or the unborn child.
Notes to physician	: Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES



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- Suitable extinguishing media : Carbon dioxide (CO₂)
- Unsuitable extinguishing media : Water
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for fire-fighters : In the event of fire, wear self-contained breathing apparatus.

SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
Deny access to unprotected persons.
- Environmental precautions : Do not flush into surface water or sanitary sewer system.
If the product contaminates rivers and lakes or drains inform respective authorities.
Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Avoid formation of aerosol.
Do not breathe vapors or spray mist.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Provide sufficient air exchange and/or exhaust in work rooms.
Pregnant women or women of child-bearing age should not be exposed to this product.
Follow standard hygiene measures when handling chemical products.



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Precautions should be taken to prevent odors and/or vapors from entering the building/structure, including but not limited to turning off and sealing air intake vents or other means of ingress for odors and/or vapors into the building/structure during product application and cure.

Avoid formation of aerosol.

Do not breathe vapors or spray mist.

Avoid exceeding the given occupational exposure limits (see section 8).

Do not get in eyes, on skin, or on clothing.

For personal protection see section 8.

Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Smoking, eating and drinking should be prohibited in the application area.

Provide sufficient air exchange and/or exhaust in work rooms.

Pregnant women or women of child-bearing age should not be exposed to this product.

Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Store in original container.
Keep in a well-ventilated place.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : Explosives
Oxidizing agents
Poisonous gases
Poisonous liquids

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
barium sulfate	7727-43-7	TWA (Inhalable particulate matter)	5 mg/m ³	ACGIH
		TWA (total dust)	15 mg/m ³	OSHA Z-1
		TWA (respirable fraction)	5 mg/m ³	OSHA Z-1
		TWA (Total)	10 mg/m ³	OSHA P0



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		dust)		
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
triphenyl phosphate	115-86-6	TWA	3 mg/m3	ACGIH
		TWA	3 mg/m3	OSHA Z-1
		TWA	3 mg/m3	OSHA P0
3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate	4098-71-9	TWA	0.005 ppm	OSHA P0
		STEL	0.02 ppm	OSHA P0

The above constituents are the only constituents of the product which have a PEL, TLV or other recommended exposure limit. At this time, the other constituents have no known exposure limits.

Engineering measures : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits.

Personal protective equipment

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove respiratory and skin/eye protection only after vapors have been cleared from the area.



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Remove contaminated clothing and protective equipment
before entering eating areas.
Wash thoroughly after handling.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Color	: various
Odor	: fruity
Odor Threshold	: No data available
pH	: Not applicable
Melting point/range / Freezing point	: No data available
Boiling point/boiling range	: No data available
Flash point	: ca. 149.99 °F / 65.55 °C (Method: closed cup)
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Upper explosion limit / Upper flammability limit	: No data available
Lower explosion limit / Lower flammability limit	: No data available
Vapor pressure	: 7.066066 hpa
Relative vapor density	: No data available
Density	: ca. 1.44 g/cm ³ (73 °F / 23 °C)
Solubility(ies)	
Water solubility	: insoluble
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available
Autoignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	



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Viscosity, dynamic	: No data available
Viscosity, kinematic	: > 20.5 mm ² /s (104 °F / 40 °C)
Explosive properties	: No data available
Oxidizing properties	: No data available
Volatile organic compounds (VOC) content	: 38 g/l

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable.
Possibility of hazardous reactions	: Stable under recommended storage conditions.
Conditions to avoid	: Extremes of temperature and direct sunlight.
Incompatible materials	: No data available
Hazardous decomposition products	: No decomposition if stored and applied as directed.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Harmful if inhaled.

Components:

4-chloro- α,α,α -trifluorotoluene:

Acute oral toxicity : LD50 Oral (Rat): > 13,000 mg/kg

Hardener MTJ (Polyoxypropylenetri(morpholinoaldimine)):

Acute oral toxicity : LD50 Oral (Rat): > 2,001 mg/kg

Hardener MI (Isophoronedimethacrylate(morpholinoaldimine)):

Acute oral toxicity : LD50 Oral (Rat): > 2,001 mg/kg

Methyl Acetate Salicylic Acid Blend:

Acute oral toxicity : Acute toxicity estimate: > 5,000 mg/kg
Method: Calculation method

Acute dermal toxicity : Acute toxicity estimate: > 5,000 mg/kg



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Method: Calculation method

tris(methylphenyl) phosphate:

Acute oral toxicity : LD50 Oral (Rat): > 5,000 mg/kg
Acute dermal toxicity : LD50 Dermal (Rabbit): 3,700 mg/kg

3-isocyanatomethyl-3,5,5-trimethylcyclohexyl isocyanate:

Acute oral toxicity : LD50 Oral (Rat): 4,814 mg/kg
Acute inhalation toxicity : LC50 (Rat): 0.031 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : LD50 Dermal (Rat): > 7,000 mg/kg

N-methyl-2-pyrrolidone:

Acute oral toxicity : LD50 Oral (Rat): 4,150 mg/kg
Acute inhalation toxicity : LC50 (Rat): 5.1 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Acute dermal toxicity : LD50 Dermal (Rabbit): > 5,000 mg/kg

4,5-dichloro-2-octyl-2H-isothiazol-3-one (DCOIT):

Acute oral toxicity : Acute toxicity estimate: 567 mg/kg
Method: Acute toxicity estimate according to Regulation (EC)
No. 1272/2008
Acute inhalation toxicity : Acute toxicity estimate: 0.16 mg/l
Test atmosphere: dust/mist
Method: Acute toxicity estimate according to Regulation (EC)
No. 1272/2008

Skin corrosion/irritation

Causes skin irritation.

Components:

Hardener MI (Isophoronedimethacrylate(morpholinoaldimine)):

Method : Regulation (EC) No. 440/2008, Annex, B.46
Result : Skin irritation

Serious eye damage/eye irritation

Causes serious eye irritation.



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Components:

Hardener MI (Isophoronedimethyl(morpholinoaldimine)):

Result : Eye irritation
Method : OECD Test Guideline 405

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Components:

Hardener MI (Isophoronedimethyl(morpholinoaldimine)):

Method : Regulation (EC) No. 440/2008, Annex, B.42 (LLNA)
Result : May cause sensitization by skin contact.

Germ cell mutagenicity

Not classified due to lack of data.

Carcinogenicity

Not classified due to lack of data.

IARC	Group 2B: Possibly carcinogenic to humans	
	4-chloro- α,α,α -trifluorotoluene	98-56-6
	Group 2B: Possibly carcinogenic to humans	
	Titanium dioxide ($> 10 \mu\text{m}$)	13463-67-7
	Group 2B: Possibly carcinogenic to humans	
	Carbon black	1333-86-4

OSHA Not applicable

NTP Not applicable

Reproductive toxicity

May damage fertility or the unborn child.

STOT-single exposure

Not classified due to lack of data.

STOT-repeated exposure

Not classified due to lack of data.

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Aspiration toxicity

Not classified due to lack of data.

Further information

Product:



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Remarks : Carbon black (1333-86-4)
Animal Toxicity:
Rat, oral, duration 2 year
Effect: no tumors

Mouse, oral, duration 2 years
Effect: no tumors
Mouse, dermal, duration 18 months
Effect: no skin tumors
Rat, inhalation, duration 2 years
Target organ: lungs
Effect: inflammation, fibrosis, tumors
Note: Tumors in the rat lung are considered to be related to the "particle overload phenomenon" rather than to a specific chemical effect of carbon black itself in the lung. These effects in rats have been reported in many studies on other poorly soluble inorganic particles and appear to be rat specific. Tumors have not been observed in other species (i.e., mouse and hamster) for carbon black or other poorly soluble particles under similar circumstances and study conditions. Mortality studies (human data): A study on carbon black production workers in the UK (Sorahan, 2001) found an increased risk of lung cancer in two of the five plants studied; however, the increase was not related to the dose of carbon black. Thus, the authors did not consider the increased risk in lung cancer to be due to carbon black exposure. A German study of carbon black workers at one plant (Morfeld, 2006; Buechte, 2006) found a similar increase in lung cancer risk but, like the Sorahan, 2001 (UK study) found no association with carbon black exposure. A large US study of 18 plants showed a reduction in lung cancer risk in carbon black production workers (DEll, 2006). Based upon these studies, the February 2006 Working Group at the International Agency for Research on Cancer (IARC) concluded that the human evidence for carcinogenicity was inadequate (IARC, 2010). Since the IARC evaluation of carbon black, Sorahan and Harrington (2007) have re-analyzed the UK study data using an alternative exposure hypothesis and found a positive association with carbon black exposure in two of the five plants. The same exposure hypothesis was applied by Morfeld and McCunney (2009) to the German cohort; in contrast, they found no association between carbon black exposure and lung cancer risk and, thus, no support for the alternative exposure hypothesis used by Sorahan and Harrington. Overall, as a result of these detailed investigations, no causative link between carbon black exposure and cancer risk in humans has been demonstrated.

IARC CANCER CLASSIFICATION: In 2006 IARC re-affirmed its 1995 finding that there is "inadequate evidence" from human health studies to assess whether carbon black causes cancer in humans. IARC concluded that there is "sufficient evidence" in experimental animal studies for the carcinogen-



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icity of carbon black. IARC's overall evaluation is that carbon black is "possibly carcinogenic to humans" (Group 2B)". This conclusion was based on IARC's guidelines, which generally require such a classification if one species exhibits carcinogenicity in two or more animal studies (IARC, 2010).

Solvent extracts of carbon black were used in one study of rats in which skin tumors were found after dermal application and several studies of mice in which sarcomas were found following subcutaneous injection. IARC concluded that there was "sufficient evidence" that carbon black extracts can cause cancer in animals (Group 2B).

ICGIH CANCER CLASSIFICATION: Confirmed Animal Carcinogen with Unknown Relevance to Humans (Category A3 Carcinogen).

ASSESSMENT: Applying the guidelines of self-classification under the Globally Harmonized System of Classification and Labeling of Chemicals, carbon black is not classified as a carcinogen. Lung tumors are induced in rats as a result of repeated exposure to inert, poorly soluble particles like carbon black and other poorly soluble particles. Rats tumors are a result of a secondary non-genotoxic mechanism that has questionable relevance for classification in humans. In support of this opinion, the CLP Guidance for Specific Target Organ Toxicity - Repeated Exposure (STOT-RE), cites lung overload under mechanisms not relevant to humans. Human health studies show that exposure to carbon black does not increase the risk to carcinogenicity.

Titanium dioxide (13463-67-7)

In lifetime inhalation studies of rats, airborne respirable-size titanium dioxide particles have shown to cause an increase in lung tumors at concentrations associated with substantial particle lung burdens and consequential pulmonary overload and inflammation. The potential for these adverse health effects appears to be closely related to the particle size and the amount of the exposed surface area that comes into contact with the lung. However, tests with other laboratory animals such as mice and hamsters, indicate that rats are significantly more susceptible to the pulmonary overload and inflammation that causes lung cancer. Epidemiological studies do not suggest an increased risk of cancer in humans from occupational exposure to titanium dioxide. Titanium dioxide has been characterized by IARC as possibly carcinogenic to humans (Group 2B) through inhalation (not ingestion). It has not been characterized as a potential carcinogen by either NTP or OSHA.



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SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

4-chloro- α,α,α -trifluorotoluene:

Toxicity to fish	:	LC50 (Brachydanio rerio (zebrafish)): 3 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 2 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): > 0.41 mg/l Exposure time: 72 h

Hardener MTJ (Polyoxypropylenetri(morpholinoaldimine)):

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 45.1 mg/l Exposure time: 48 h NOEC (Daphnia magna (Water flea)): 12.5 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 1.56 mg/l Exposure time: 72 h

triphenyl phosphate:

Toxicity to fish	:	LC50 (Oncorhynchus mykiss (rainbow trout)): 0.4 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 1 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 2 mg/l Exposure time: 96 h

Hardener MI (Isophoronedimethacrylate(morpholinoaldimine)):

Toxicity to daphnia and other aquatic invertebrates	:	EC50 (Daphnia magna (Water flea)): 40.2 mg/l Exposure time: 48 h NOEC (Daphnia magna (Water flea)): 17.1 mg/l Exposure time: 48 h
Toxicity to algae/aquatic plants	:	EC50 (Pseudokirchneriella subcapitata (green algae)): 89 mg/l Exposure time: 72 h



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tris(methylphenyl) phosphate:

4,5-dichloro-2-octyl-2H-isothiazol-3-one (DCOIT):

Toxicity to fish : LC50 (Fish): 0.0027 mg/l
Exposure time: 96 h

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Other adverse effects

Product:

Additional ecological information : Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
May be harmful to the environment if released in large quantities.
Water polluting material.

Components:

Methyl Acetate Salicylic Acid Blend:

Additional ecological information : Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Global warming potential

Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) of the United Nations Framework Convention on Climate Change (UNFCCC)

Components:

octamethylcyclotetrasiloxane:

20-year global warming potential: 2.66
100-year global warming potential: 0.739
500-year global warming potential: 0.211
Atmospheric lifetime: 0.027 yr
Radiative efficiency: 0.12 Wm²ppb
Further information: Miscellaneous compounds



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SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

- Waste from residues : Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
- Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

- UN/ID No. : UN 3082
- Proper shipping name : Environmentally hazardous substance, liquid, n.o.s.
(4-chloro-alpha,alpha,alpha-trifluorotoluene)
- Class : 9
- Packing group : III
- Labels : Miscellaneous
- Packing instruction (cargo aircraft) : 964
- Packing instruction (passenger aircraft) : 964

IMDG-Code

- UN number : UN 3082
- Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID,
N.O.S.
(4-chloro-alpha,alpha,alpha-trifluorotoluene)
- Class : 9
- Packing group : III
- Labels : 9
- EmS Code : F-A, S-F
- Marine pollutant : yes

Domestic regulation

49 CFR

Not regulated as a dangerous good

IMDG: For Limited Quantity special provisions reference IMDG Code Chapter 3.4

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.



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SECTION 15. REGULATORY INFORMATION

TSCA list : All chemical substances in this product are either listed as active on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

The following substance(s) is/are subject to a Significant New Use Rule:

Hardener MI (Isophoronedimethacrylate) 1217271-02-7 See 40 CFR § 721.10774
Methyl Acetate Salicylic Acid Blend Not Assigned

The following substance(s) is/are subject to TSCA 12(b) export notification requirements:

Methyl Acetate Salicylic Acid Blend Not Assigned

CERCLA Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

SARA 304 Extremely Hazardous Substances Reportable Quantity

Listed substances in the product are at low enough levels to not be expected to exceed the RQ

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

Components	CAS-No.	Component TPQ (lbs)
Methyl Acetate Salicylic Acid Blend	Not Assigned	

SARA 311/312 Hazards : Flammable (gases, aerosols, liquids, or solids)
Acute toxicity (any route of exposure)
Respiratory or skin sensitization
Reproductive toxicity
Skin corrosion or irritation
Serious eye damage or eye irritation

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

California Prop. 65

⚠ WARNING: This product can expose you to chemicals including 4-chloro- α,α,α -trifluorotoluene, which is known to the State of California to cause cancer, and N-methyl-2-pyrrolidone, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.



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SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
OSHA P0 / TWA	:	8-hour time weighted average
OSHA P0 / STEL	:	Short-term exposure limit
OSHA Z-1 / TWA	:	8-hour time weighted average

Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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