

Rubinate M, Suprasec 5005, A-Side Component

SECTION 1. IDENTIFICATION

Product name : Rubinate M, Suprasec 5005, A-Side Component

Manufacturer or supplier's details

Company name of supplier : Huntsman Building Solutions
Address : 3315 E Division St
Arlington, TX 76011
United States of America (USA)
Telephone : Tech Info:(817) 460-4900

E-mail address of person responsible for the SDS : info@huntsmanbuilds.com

Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

Recommended use of the chemical and restrictions on use

Recommended use : Component of a Polyurethane System.

Restrictions on use : For industrial use only.

SECTION 2. HAZARDS IDENTIFICATION**GHS classification in accordance with 29 CFR 1910.1200**

Acute toxicity (Inhalation) : Category 4
Skin irritation : Category 2
Eye irritation : Category 2B
Respiratory sensitisation : Category 1
Skin sensitisation : Category 1
Specific target organ toxicity - single exposure : Category 3 (Respiratory system)

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H315 + H320 Causes skin and eye irritation.
H317 May cause an allergic skin reaction.

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H332 Harmful if inhaled.
 H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
 H335 May cause respiratory irritation.

Precautionary statements

: **Prevention:**

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
 P264 Wash skin 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.
 P280 Wear protective gloves.
 P285 In case of inadequate ventilation 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.
 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 Take off contaminated clothing and wash before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.
 P405 Store locked up.

Disposal:

P501 Dispose of contents/container to an approved facility in accordance with local, regional, national and international regulations.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Substance

Hazardous components

Chemical name	CAS-No.	Concentration (% w/w)
Diphenylmethanediisocyanate	9016-87-9	50 - 70
4,4'-methylenediphenyl diisocyanate	101-68-8	30 - 50

The specific chemical identity and/or exact percentage (concentration) of composition may be withheld as a trade secret.

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SECTION 4. FIRST AID MEASURES

- General advice : Move out of dangerous area.
Do not leave the victim unattended.
Get medical attention immediately if symptoms occur.
Show this safety data sheet to the doctor in attendance.
- If inhaled : If breathed in, move person into fresh air.
Call a physician or poison control centre immediately.
Keep patient warm and at rest.
Keep respiratory tract clear.
If breathing is difficult, give oxygen.
If breathing is irregular or stopped, administer artificial respiration.
If unconscious, place in recovery position and seek medical advice.
Consult a physician immediately if symptoms such as shortness of breath or asthma are observed.
A hyper-reactive response to even minimal concentrations of diisocyanates may develop in sensitised persons.
The exposed person may need to be kept under medical surveillance for 48 hours.
LC50 (rat) : ca. 490 mg/m³ (4 hours) : using experimentally produced respirable aerosol having aerodynamic diameter <5microns.
- Methods used to generate the exposure concentrations in the animal studies use extreme laboratory conditions and does not represent actual exposure conditions of the material in the workplace, storage, transportation or expected use on the market due to the very low vapor pressure. Therefore, these test results cannot be used to for hazard classification of the material. Rather, an acute toxicity estimate is calculated based on weight of evidence and expert judgement and is used to justify a modified classification for acute inhalation toxicity.
- In case of skin contact : In case of contact, immediately flush skin with soap and plenty of water.
Take off contaminated clothing and shoes immediately.
Wash contaminated clothing before reuse.
Thoroughly clean shoes before reuse.
Call a physician if irritation develops or persists.
An MDI study has demonstrated that a polyglycol-based skin cleanser (such as D-Tam™, PEG-400) or corn oil may be more effective than soap and water.
- In case of eye contact : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
If easy to do, remove contact lens, if worn.
Protect unharmed eye.
Keep eye wide open while rinsing.
Seek medical advice.

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- If swallowed : Gently wipe or rinse the inside of the mouth with water.
DO NOT induce vomiting unless directed to do so by a physician or poison control center.
Keep respiratory tract clear.
Keep at rest.
If a person vomits when lying on his back, place him in the recovery position.
Never give anything by mouth to an unconscious person.
Take victim immediately to hospital.
If symptoms persist, call a physician.
- Most important symptoms and effects, both acute and delayed : Severe allergic skin reactions, bronchospasm and anaphylactic shock
This product is a respiratory irritant and potential respiratory sensitiser: repeated inhalation of vapour or aerosol at levels above the occupational exposure limit could cause respiratory sensitisation.
Symptoms may include irritation to the eyes, nose, throat and lungs, possibly combined with dryness of the throat, tightness of chest and difficulty in breathing.
The onset of the respiratory symptoms may be delayed for several hours after exposure.
A hyper-reactive response to even minimal concentrations of MDI may develop in sensitised persons.
- Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training.
It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.
If potential for exposure exists refer to Section 8 for specific personal protective equipment.
First Aid responders should pay attention to self-protection and use the recommended protective clothing
- Notes to physician : Symptomatic and supportive therapy as needed. Following severe exposure medical follow-up should be monitored for at least 48 hours.

The first aid procedure should be established in consultation with the doctor responsible for industrial medicine.

SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Foam
Carbon dioxide (CO₂)
Dry powder
- Unsuitable extinguishing media : Water may be used if no other available and then in copious quantities. Reaction between water and hot isocyanate may be vigorous.

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Specific hazards during firefighting	: Do not allow run-off from fire fighting to enter drains or water courses. The pressure in sealed containers can increase under the influence of heat. Exposure to decomposition products may be a hazard to health.
Hazardous combustion products	: Combustion products may include: carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons and HCN. In the event of extreme heat (>500 degrees C), aniline is suspected of being formed.
Specific extinguishing methods	: Cool containers/tanks with water spray.
Further information	: Standard procedure for chemical fires. Due to reaction with water producing CO ₂ -gas, a hazardous build-up of pressure could result if contaminated containers are re-sealed. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Prevent fire extinguishing water from contaminating surface water or the ground water system. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for firefighters	: Wear an approved positive pressure self-contained breathing apparatus in addition to standard fire fighting gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	: Immediately evacuate personnel to safe areas. Use personal protective equipment. If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. Ensure adequate ventilation. Keep people away from and upwind of spill/leak. Only qualified personnel equipped with suitable protective equipment may intervene. For additional precautions and advice on safe handling, see section 7. Never return spills in original containers for re-use. Make sure that there is a sufficient amount of neutralizing/absorbent material near the storage area. The danger areas must be delimited and identified using relevant warning and safety signs. Treat recovered material as described in the section "Disposal considerations". For disposal considerations see section 13.
Environmental precautions	: Do not allow uncontrolled discharge of product into the environment. Do not allow material to contaminate ground water system. Prevent product from entering drains.

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Prevent further leakage or spillage if safe to do so.
 Local authorities should be advised if significant spillages cannot be contained.
 If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Clean-up methods - small spillage
 Contain spillage, soak up with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and transfer to a container for disposal according to local / national regulations (see section 13).
 Clean contaminated surface thoroughly.
 Sweep up or vacuum up spillage and collect in suitable container for disposal.
 Neutralize small spillages with decontaminant.
 The compositions of liquid decontaminants are given in Section 16.
 Remove and dispose of residues.
 Clean-up methods - large spillage
 If the product is in its solid form:
 Spilled MDI flakes should be picked up carefully.
 The area should be vacuum cleaned to remove remaining dust particles completely.
 If the product is in its liquid form:
 Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
 Leave to react for at least 30 minutes.
 Shovel into open-top drums for further decontamination.
 Wash the spillage area with water.
 Test atmosphere for MDI vapour.
 Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Technical measures : Ensure that eyewash stations and safety showers are close to the workstation location.

Local/Total ventilation : Use only with adequate ventilation.

Advice on protection against fire and explosion : Normal measures for preventive fire protection.

Advice on safe handling : For personal protection see section 8.
 Avoid formation of aerosol.
 Do not breathe vapours or spray mist.
 Do not breathe vapours/dust.
 Do not swallow.
 Do not get in eyes or mouth or on skin.
 Do not get on skin or clothing.
 Avoid exposure - obtain special instructions before use.
 Smoking, eating and drinking should be prohibited in the application area.
 Provide sufficient air exchange and/or exhaust in work rooms.
 Keep container closed when not in use.
 Open drum carefully as content may be under pressure.

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Dispose of rinse water in accordance with local and national regulations.

Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.

Industrial use of aprotic polar solvents for cleaning can release hazardous primary aromatic amines (>0.1%)

- Conditions for safe storage : Keep containers tightly closed in a dry, cool and well-ventilated place.
Keep in properly labelled containers.
Observe label precautions.
Protect from moisture.
Electrical installations / working materials must comply with the technological safety standards.
Containers which are opened must be carefully resealed and kept upright to prevent leakage.
- Materials to avoid : For incompatible materials please refer to Section 10 of this SDS.
- Further information on storage stability : Stable under recommended storage conditions.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
4,4'-methylenediphenyl diisocyanate	101-68-8	TWA	0.005 ppm	ACGIH
		TWA	0.005 ppm 0.05 mg/m ³	NIOSH REL
		C	0.02 ppm 0.2 mg/m ³	NIOSH REL
		C	0.02 ppm 0.2 mg/m ³	OSHA Z-1

Personal protective equipment

- Respiratory protection : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.
Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
In emergency, non-routine and unknown exposure situations, including confined space entries, a NIOSH-certified full facepiece pressure demand self-contained breathing apparatus (SCBA) or a full facepiece pressure demand supplied air respirator (SAR) with auxiliary self-contained air supply, should be used.

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Hand protection

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.
Protective gloves should be worn when handling freshly made polyurethane products to avoid contact with trace residual materials which may be hazardous in contact with skin.

Use chemical resistant gloves classified under Standard EN374: protective gloves against chemicals and microorganisms. Examples of glove materials that might provide suitable protection include: Butyl rubber, Chlorinated polyethylene, Polyethylene, Ethyl vinyl alcohol copolymers laminated ("EVAL"), Polychloroprene (Neoprene*), Nitrile/butadiene rubber ("nitrile" or "NBR"), Polyvinyl chloride ("PVC" or "vinyl"), Fluoroelastomer (Viton*).

When prolonged or frequently repeated contact may occur, a glove with protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN374) is recommended.

When only brief contact is expected, a glove with protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN374) is recommended.
Notice: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all requisite workplace factors such as, but not limited to : other chemicals that may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as instructions/specifications provided by the glove supplier
By industrial use of aprotic polar solvents for cleaning : Butyl rubber (0.7mm), Nitrile rubber (0.4mm), Chloroprene (0.5mm)

Eye protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
Chemical splash goggles.
Always wear eye protection when the potential for inadvertent eye contact with the product cannot be excluded.
Please follow all applicable local/national requirements when selecting protective measures for a specific workplace.
Ensure that eyewash stations and safety showers are close to the workstation location.

Skin and body protection

: Impervious clothing
Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Recommended:
Overall (preferably heavy cotton) or Tyvek-Pro Tech 'C' , Tyvek Pro 'F' disposable coverall.

Protective measures

: Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing

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The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Ensure that eye flushing systems and safety showers are located close to the working place.

Hygiene measures : Handle in accordance with good industrial hygiene and safety practice.
 Wash face, hands and any exposed skin thoroughly after handling.
 Remove contaminated clothing and protective equipment before entering eating areas.
 When using do not eat, drink or smoke.
 Contaminated work clothing should not be allowed out of the workplace.
 Wash hands before breaks and immediately after handling the product.
 Wash hands before breaks and at the end of workday.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : liquid

Colour : brown, Clear

Odour : slight, musty

Odour Threshold : No data is available on the product itself.

pH : No data is available on the product itself.

Freezing point : No data is available on the product itself.

Melting point : No data is available on the product itself.

Boiling point : No data is available on the product itself.

Flash point : > 302 °F / > 150 °C
 Method: closed cup

Evaporation rate : No data is available on the product itself.

Flammability (solid, gas) : No data is available on the product itself.

Flammability (liquids) : No data is available on the product itself.

Upper explosion limit / Upper flammability limit : No data is available on the product itself.

Lower explosion limit / Lower flammability limit : No data is available on the product itself.

Vapour pressure : < 0.00001 hPa (68 °F / 20 °C)

Relative vapour density : No data is available on the product itself.

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Relative density	:	1.23
Density	:	1.23 g/cm ³ (77 °F / 25 °C) Method: estimated
Solubility(ies)	:	
Water solubility	:	Decomposes in contact with water. (68 °F / 20 °C) Method: Information given is based on data obtained from similar substances.
Solubility in other solvents	:	No data is available on the product itself.
Partition coefficient: n-octanol/water	:	No data is available on the product itself.
Auto-ignition temperature	:	No data is available on the product itself.
Thermal decomposition	:	No data is available on the product itself.
Self-Accelerating decomposition temperature (SADT)	:	No data is available on the product itself.
Viscosity	:	
Viscosity, dynamic	:	200 mPa.s (77 °F / 25 °C)
Explosive properties	:	No data is available on the product itself.
Oxidizing properties	:	No data is available on the product itself.
Particle size	:	No data is available on the product itself.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Reaction with water (moisture) produces CO ₂ -gas. Exothermic reaction with materials containing active hydrogen groups. The reaction becomes progressively more vigorous and can be violent at higher temperatures if the miscibility of the reaction partners is good or is supported by stirring or by the presence of solvents. MDI is insoluble with, and heavier than water and sinks to the bottom but reacts slowly at the interface. A solid water-insoluble layer of polyurea is formed at the interface by liberating carbon dioxide gas.
Conditions to avoid	:	Extremes of temperature and direct sunlight. Exposure to air or moisture over prolonged periods.
Incompatible materials	:	Acids

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Amines
Bases
Metals
water

Hazardous decomposition products : Combustion products may include: carbon monoxide, carbon dioxide, nitrogen oxides, hydrocarbons and HCN. In the event of extreme heat (>500 degrees C), aniline is suspected of being formed.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure : No data is available on the product itself.

Acute toxicity

Acute oral toxicity - Product : LD50 (Rat, male): > 10,000 mg/kg
Method: OECD Test Guideline 401

Acute inhalation toxicity - Product : Assessment: The substance/mixture is not toxic on inhalation as defined by dangerous goods regulations.

Acute toxicity estimate: 1.36 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist
Method: Calculation method

Remarks: Methods used to generate the exposure concentrations in the animal studies use extreme laboratory conditions and does not represent actual exposure conditions of the material in the workplace, storage, transportation or expected use on the market due to the very low vapor pressure. Therefore, these test results cannot be used to for hazard classification of the material. Rather, an acute toxicity estimate is calculated based on weight of evidence and expert judgement and is used to justify a modified classification for acute inhalation toxicity.

Acute dermal toxicity - Product : LD50 (Rabbit, male and female): > 9,400 mg/kg
Method: OECD Test Guideline 402

Acute toxicity (other routes of administration) : No data available

Skin corrosion/irritation**Components:**

Diphenylmethanediisocyanate:
Species: Rabbit
Assessment: Irritating to skin.
Method: OECD Test Guideline 404

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Result: Skin irritation

4,4'-methylenediphenyl diisocyanate:

Species: Rabbit

Method: OECD Test Guideline 404

Result: Irritating to skin.

Serious eye damage/eye irritation**Components:**

Diphenylmethanediisocyanate:

Species: Rabbit

Result: Irritation to eyes, reversing within 7 days

Assessment: Mild eye irritant

Method: OECD Test Guideline 405

4,4'-methylenediphenyl diisocyanate:

Species: Rabbit

Result: Mild eye irritation

Respiratory or skin sensitisation**Components:**

Diphenylmethanediisocyanate:

Exposure routes: Skin

Species: Guinea pig

Method: OECD Test Guideline 406

Result: May cause sensitisation by skin contact.

Exposure routes: Respiratory Tract

Species: Rat

Result: May cause sensitisation by inhalation.

4,4'-methylenediphenyl diisocyanate:

Exposure routes: Skin

Species: Mouse

Method: OECD Test Guideline 429

Result: May cause sensitisation by skin contact.

Exposure routes: Respiratory Tract

Species: Guinea pig

Result: May cause sensitisation by inhalation.

Assessment:

May cause an allergic skin reaction., May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity**Product:**

Genotoxicity in vitro

: Concentration: 200 ug/plate

Metabolic activation: with and without metabolic activation

Method: Directive 67/548/EEC, Annex, B.13/14

Result: negative

Product:

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Genotoxicity in vivo : Application Route: Inhalation
Result: Not classified due to inconclusive data.

Application Route: Inhalation
Exposure time: 3 Weeks
Dose: 113 mg/m³
Method: OECD Test Guideline 474
Result: negative

Product:

Germ cell mutagenicity-
Assessment : Tests on bacterial or mammalian cell cultures did not show
mutagenic effects.

Carcinogenicity**Product:**

Remarks: Rats have been exposed for two years to a respirable aerosol of polymeric MDI which resulted in a chronic pulmonary irritation at high concentrations. Only at the top level (6 mg/m³), there was a significant incidence of a benign tumour of the lung (adenoma) and one malignant tumour (adenocarcinoma). There were no lung tumours at 1 mg/m³ and no effects at 0.2 mg/m³. Overall, the tumour incidence, both benign and malignant, and the number of animals with the tumours were not different from controls. The increased incidence of lung tumours is associated with prolonged respiratory irritation and the concurrent accumulation of yellow material in the lung, which occurred throughout the study. In the absence of prolonged exposure to high concentrations leading to chronic irritation and lung damage, it is highly unlikely that tumour formation will occur.

Remarks: Industrial use of aprotic polar solvents for cleaning can release hazardous primary aromatic amines (>0.1%)
Based on animal studies, primary aromatic amines are considered as potential carcinogen to humans. Some of those chemicals are proven carcinogens to humans
Provided the recommended personal protective equipment and hygiene measures are applied, no adverse effects to human health are to be expected

Species: Rat, male and female
Application Route: Inhalation
Exposure time: 24 month(s)
Dose: 1 mg/m³
Frequency of Treatment: 5 daily
Method: OECD Test Guideline 453
Result: positive

Species: Rat, male and female
Application Route: Inhalation
Exposure time: 24 month(s)
Dose: 1 mg/m³
Frequency of Treatment: 5 daily
Method: OECD Test Guideline 453
Result: positive

Carcinogenicity -
Assessment : No data available

IARC

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed

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human carcinogen by IARC.

ACGIH

No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

OSHA

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

NTP

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity**Product:**

Effects on fertility

: Species: Rat, male and female
Application Route: Inhalation
Method: OECD Test Guideline 414
Remarks: No significant adverse effects were reported

Product:

Effects on foetal development

: Species: Rat, male and female
Application Route: Inhalation
General Toxicity Maternal: 4 mg/m³
Method: OECD Test Guideline 414
Result: No teratogenic effects

Product:

Reproductive toxicity - Assessment

: No toxicity to reproduction
No evidence of adverse effects on sexual function and fertility, or on development, based on animal experiments.

STOT - single exposure**Product:**

Exposure routes: Inhalation
Target Organs: Respiratory Tract
Assessment: May cause respiratory irritation.

STOT - repeated exposure**Product:**

Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Remarks: Lung decrement has been reported in some studies as a consequence of repeated exposure to MDI. However, this effect can only be observed after inhalation exposure in the tissue at the point of contact and does not represent systemic toxicity. It is a local effect that is already covered by respiratory irritation (STOT single exposure, Cat. 3) and respiratory sensitization (Category 1).

In some humans, but not all, epidemiological studies have found long term decreases in ventilatory function and respiratory symptoms (EU RA 2005). However, there is generally co-exposure to other materials and sometimes also to toluene diisocyanate which may have

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contributed to lung decrement. Therefore, it is concluded that possible lung effects do not qualify as specific target organ toxicity after repeated exposure in accordance to chapter 3.9.1.6 of the GHS (UNECE 2003). In addition, all warning and safety measures for local effects as well as for acute inhalation toxicity already provide for a protection of workers and professional users that are involved in the handling of MDI.

Repeated dose toxicity**Product:**

Species: Rat, male and female
NOEC: 0.2 mg/m³
Exposure time: 17,520 h
Number of exposures: 5 d
Method: OECD Test Guideline 453

Repeated dose toxicity - Assessment : No data available

Aspiration toxicity

No data available

Experience with human exposure

General Information: No data available

Inhalation: No data available

Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

Toxicology, Metabolism, Distribution

No data available

Neurological effects

No data available

Further information

Ingestion: No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity**

Toxicity to fish - Product : LC50 (Brachydanio rerio (zebrafish)): > 1,000 mg/l
Exposure time: 96 h

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	Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 203
	LC0: > 1,000 mg/l Exposure time: 96 h
Toxicity to daphnia and other aquatic invertebrates - Product	: EC50 (Daphnia magna (Water flea)): > 1,000 mg/l Exposure time: 24 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 202
Toxicity to algae/aquatic plants - Product	: EC50 (Desmodesmus subspicatus (green algae)): > 1,640 mg/l Exposure time: 72 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 201
M-Factor (Acute aquatic toxicity)	: No data available
Toxicity to fish (Chronic toxicity)	: No data available
Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) - Product	: NOEC (Daphnia magna (Water flea)): >= 10 mg/l Exposure time: 21 d Test Type: semi-static test Test substance: Fresh water Method: OECD Test Guideline 211
M-Factor (Chronic aquatic toxicity)	: No data available
Toxicity to microorganisms - Product	: EC50 (activated sludge): > 100 mg/l Exposure time: 3 h Test Type: static test Test substance: Fresh water Method: OECD Test Guideline 209
Toxicity to soil dwelling organisms - Product	: EC50 (Eisenia fetida (earthworms)): > 1,000 mg/kg Exposure time: 336 h Method: OECD Test Guideline 207
Plant toxicity	: No data available
Sediment toxicity	: No data available
Toxicity to terrestrial organisms	: No data available
Ecotoxicology Assessment Acute aquatic toxicity	: No data available

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Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Persistence and degradability

Biodegradability - Product : Inoculum: Domestic sewage
Concentration: 30 mg/l
Result: Not biodegradable
Biodegradation: 0 %
Exposure time: 28 d
Method: Inherent Biodegradability: Modified MITI Test (II)

Biochemical Oxygen Demand (BOD) : No data available

Chemical Oxygen Demand (COD) : No data available

BOD/COD : No data available

ThOD : No data available

BOD/ThOD : No data available

Dissolved organic carbon (DOC) : No data available

Physico-chemical removability : No data available

Components:

Diphenylmethanediisocyanate:
Stability in water : Degradation half life(DT50): 0.8 d (77 °F / 25 °C)
Method: No information available.
Remarks: Fresh water

4,4'-methylenediphenyl diisocyanate:
Stability in water : Degradation half life(DT50): 20 hrs (77 °F / 25 °C)
Remarks: Fresh water

Photodegradation : No data available

Impact on Sewage Treatment : No data available

Bioaccumulative potential

Bioaccumulation - Product : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 200
Remarks: Bioaccumulation is unlikely.

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Components:

4,4'-methylenediphenyl diisocyanate:

Partition coefficient: n- : log Pow: 4.51 (68 °F / 20 °C)
octanol/water pH: 7
Method: OECD Test Guideline 117**Mobility in soil**

Mobility : No data available

Distribution among : No data available
environmental compartments

Stability in soil : No data available

Other adverse effectsEnvironmental fate and : No data available
pathwaysResults of PBT and vPvB : No data available
assessmentEndocrine disrupting : No data available
potentialAdsorbed organic bound : No data available
halogens (AOX)**Hazardous to the ozone layer**Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82
Protection of Stratospheric Ozone - CAA Section 602 Class I
Substances
Remarks: This product neither contains, nor was
manufactured with a Class I or Class II ODS as defined by the
U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A +
B).Additional ecological : No data available
informationGlobal warming potential : No data available
(GWP)**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**Waste from residues : Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with
chemical or used container.
Send to a licensed waste management company.Contaminated packaging : Empty remaining contents.
Dispose of as unused product.

Rubinate M, Suprasec 5005, A-Side Component

Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA

Not regulated as dangerous goods

IMDG

Not regulated as dangerous goods

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

National Regulations

DOT Classification

UN/ID/NA number : NA 3082
 Proper shipping name : OTHER REGULATED SUBSTANCES, LIQUID, N.O.S.
 (Methylene Diphenyl Diisocyanate)
 Class : 9
 Packing group : III
 Labels : Class 9 - Miscellaneous dangerous substances and articles
 ERG Code : 171
 Marine pollutant : no

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.

SECTION 15. REGULATORY INFORMATION

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
4,4'-methylenediphenyl diisocyanate	101-68-8	5000	11904
chlorobenzene	108-90-7	100	*

*: Calculated RQ exceeds reasonably attainable upper limit.

SARA 311/312 Hazards : Acute toxicity (any route of exposure)
 Skin corrosion or irritation
 Serious eye damage or eye irritation
 Respiratory or skin sensitisation
 Specific target organ toxicity (single or repeated exposure)

Rubinate M, Suprasec 5005, A-Side Component

SARA 313	:	The following components are subject to reporting levels established by SARA Title III, Section 313:		
		Diphenylmethanediisocyanate	9016-87-9	>= 50 - < 70 %
		4,4'-methylenediphenyl diisocyanate	101-68-8	>= 30 - < 50 %

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

4,4'-methylenediphenyl diisocyanate	101-68-8
-------------------------------------	----------

California Prop. 65

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

The components of this product are reported in the following inventories:

CH INV	:	On the inventory, or in compliance with the inventory
DSL	:	All components of this product are on the Canadian DSL
AICS	:	On the inventory, or in compliance with the inventory
NZIoC	:	On the inventory, or in compliance with the inventory
ENCS	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
TCSI	:	On the inventory, or in compliance with the inventory
TSCA	:	On the inventory, or in compliance with the inventory

Inventories

AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

TSCA - 5(a) Significant New Use Rule List of Chemicals

No substances are subject to a Significant New Use Rule.

US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)

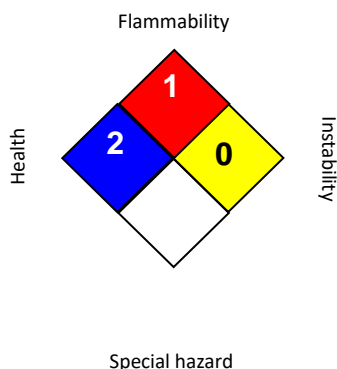
No substances are subject to TSCA 12(b) export notification requirements.

Rubinate M, Suprasec 5005, A-Side Component

SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV:

HEALTH	*	2
FLAMMABILITY		1
PHYSICAL HAZARD		0

HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard

Liquid decontaminants (percentages by weight or volume) :

Decontaminant 1 : *- sodium carbonate : 5 - 10 % *- liquid detergent : 0.2 - 2 % *- water : to make up to 100 %

Decontaminant 2 : *- concentrated ammonia solution : 3 - 8 % *- liquid detergent : 0.2 - 2 % *- water : to make up to 100 %

Decontaminant 1 reacts slower with diisocyanates but is more environmentally friendly than decontaminant 2.

Decontaminant 2 contains ammonia. Ammonia presents health hazards. (See supplier safety information.)

Revision Date : 11/19/2019

- ACGIH : USA. ACGIH Threshold Limit Values (TLV)
- NIOSH REL : USA. NIOSH Recommended Exposure Limits
- OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
- ACGIH / TWA : 8-hour, time-weighted average
- NIOSH REL / TWA : Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
- NIOSH REL / C : Ceiling value not be exceeded at any time.
- OSHA Z-1 / C : Ceiling

The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

IN ALL CASES, IT IS THE RESPONSIBILITY OF THE USER TO DETERMINE THE APPLICABILITY OF SUCH INFORMATION AND RECOMMENDATIONS AND THE SUITABILITY OF ANY PRODUCT FOR ITS OWN PARTICULAR PURPOSE.

Rubinate M, Suprasec 5005, A-Side Component

THE PRODUCT MAY PRESENT HAZARDS AND SHOULD BE USED WITH CAUTION. WHILE CERTAIN HAZARDS ARE DESCRIBED IN THIS PUBLICATION, NO GUARANTEE IS MADE THAT THESE ARE THE ONLY HAZARDS THAT EXIST.

Hazards, toxicity and behaviour of the products may differ when used with other materials and are dependent upon the manufacturing circumstances or other processes. Such hazards, toxicity and behaviour should be determined by the user and made known to handlers, processors and end users.

The trademarks above are the property of Huntsman Corporation or an affiliate thereof.

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Revision date 20-Jun-2023

Revision Number 2

1. Identification

Product identifier

Product Name Heatlok Soya HP/Airmetic Soya HP Resin

Other means of identification

Product Code(s) B2025-00

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended use Component B of polyurethane system

Restrictions on use

Details of the supplier of the safety data sheet

Manufacturer Address

Huntsman Building Solutions
3315 E. Division St.
Arlington, TX 76011
Telephone: 817-640-4900
sds@huntsmanbuilds.com

Emergency telephone number

24 Hour Emergency Phone Number Chemtrec 1-800-424-9300
CANUTEC 613-996-6666 or *666 (cellular)

Emergency Telephone

2. Hazard(s) identification

Classification

This product is not considered hazardous by either the US 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) or the Canadian Workplace Hazardous Material Information System (WHMIS 2015)

Appearance

Physical state No information available

Odor

Label elements

Hazard statements

This product is not considered hazardous by either the US 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200) or the Canadian Workplace Hazardous Material Information System (WHMIS 2015)

Other information

May be harmful if swallowed.

3. Composition/information on ingredients

Substance

Not applicable.

Mixture

Chemical name	CAS No	Weight-%	Hazardous Material Information Review Act registry number (HMIRA registry #)	Date HMIRA filed and date exemption granted (if applicable)
2-Propanol, 1-chloro-, phosphate (3:1)	13674-84-5	3-6	-	-
1,2-Propanediol	57-55-6	.5-2	-	-
1,2,3-Propanetriol	56-81-5	.5-2	-	-
1H-Imidazole, 1,2-dimethyl-	1739-84-0	0.05-0.1175	-	-

4. First-aid measures

Description of first aid measures

Inhalation	Remove to fresh air.
Eye contact	Rinse thoroughly with plenty of water for at least 15 minutes, lifting lower and upper eyelids. Consult a physician.
Skin contact	Wash skin with soap and water.
Ingestion	Rinse mouth.

Most important symptoms and effects, both acute and delayed

Symptoms No information available.

Indication of any immediate medical attention and special treatment needed

Note to physicians Treat symptomatically.

5. Fire-fighting measures

Suitable Extinguishing Media	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Large Fire	CAUTION: Use of water spray when fighting fire may be inefficient.
Unsuitable extinguishing media	Do not scatter spilled material with high pressure water streams.
Specific hazards arising from the chemical	No information available.
Explosion data	
Sensitivity to mechanical impact	None.
Sensitivity to static discharge	None.
Special protective equipment and	Firefighters should wear self-contained breathing apparatus and full firefighting turnout gear.

precautions for fire-fighters Use personal protection equipment.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Personal precautions Ensure adequate ventilation.

Methods and material for containment and cleaning up

Methods for containment Prevent further leakage or spillage if safe to do so.

Methods for cleaning up Pick up and transfer to properly labeled containers.

7. Handling and storage

Precautions for safe handling

Advice on safe handling Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Conditions Keep containers tightly closed in a dry, cool and well-ventilated place.

8. Exposure controls/personal protection

Control parameters

Exposure Limits

Chemical name	ACGIH TLV		OSHA PEL	NIOSH
1,2,3-Propanetriol 56-81-5	-		TWA: 15 mg/m ³ mist, total particulate TWA: 5 mg/m ³ mist, respirable fraction (vacated) TWA: 10 mg/m ³ mist, total particulate (vacated) TWA: 5 mg/m ³ mist, respirable fraction	-
Chemical name	Alberta	British Columbia	Ontario	Quebec
1,2-Propanediol 57-55-6			TWA: 10 mg/m ³ TWA: 50 ppm TWA: 155 mg/m ³	
1,2,3-Propanetriol 56-81-5	TWA: 10 mg/m ³	TWA: 10 mg/m ³ TWA: 3 mg/m ³		TWA: 10 mg/m ³

Biological occupational exposure limits

This product, as supplied, does not contain any hazardous materials with biological limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering controls Showers
Eyewash stations
Ventilation systems.

Individual protection measures, such as personal protective equipment

Eye/face protection	No special protective equipment required.
Hand protection	No special protective equipment required.
Skin and body protection	No special protective equipment required.
Respiratory protection	No protective equipment is needed under normal use conditions. If exposure limits are exceeded or irritation is experienced, ventilation and evacuation may be required.
General hygiene considerations	Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties**Information on basic physical and chemical properties**

Physical state	No information available
Appearance	
Color	
Odor	
Odor threshold	

Property	Values	Remarks • Method
pH	No data available	None known
Melting point / freezing point	No data available	None known
Boiling point / boiling range	No data available	None known
Flash point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limit in Air		None known
Upper flammability or explosive limits	No data available	
Lower flammability or explosive limits	No data available	
Vapor pressure	No data available	None known
Relative vapor density	No data available	None known
Relative density	No data available	None known
Water solubility	No data available	None known
Solubility in other solvents	No data available	None known
Partition coefficient	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature		None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Other information		
Explosive properties	No information available	
Oxidizing properties	No information available	
VOC Content (%)	No information available	

10. Stability and reactivity

Reactivity	No information available.
Chemical stability	Stable under normal conditions.
Possibility of hazardous reactions	None under normal processing.

Conditions to avoid None known based on information supplied.

Incompatible materials None known based on information supplied.

Hazardous decomposition products None known based on information supplied.

11. Toxicological information

Information on likely routes of exposure

Inhalation Specific test data for the substance or mixture is not available.

Eye contact Specific test data for the substance or mixture is not available.

Skin contact Specific test data for the substance or mixture is not available.

Ingestion May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Acute toxicity

Numerical measures of toxicity

No information available

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral) 2,990.30 mg/kg
ATEmix (dermal) 8,511.80 mg/kg
ATEmix (inhalation-dust/mist) 6.51 mg/l

Component Information

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
2-Propanol, 1-chloro-, phosphate (3:1) 13674-84-5	= 1500 mg/kg (Rat)	> 5000 mg/kg (Rabbit)	> 5.05 mg/L (Rat) 4 h
1,2-Propanediol 57-55-6	= 20 g/kg (Rat)	= 20800 mg/kg (Rabbit)	-
1,2,3-Propanetriol 56-81-5	= 12600 mg/kg (Rat)	> 10 g/kg (Rabbit)	> 2.75 mg/L (Rat) 4 h
1H-Imidazole, 1,2-dimethyl- 1739-84-0	-	> 200 mg/kg (Rabbit)	> 3 mg/L (Rat) 4 h

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Skin corrosion/irritation No information available.

Serious eye damage/eye irritation No information available.

Respiratory or skin sensitization No information available.

Germ cell mutagenicity No information available.

Carcinogenicity No information available.

Reproductive toxicity No information available.

STOT - single exposure No information available.

STOT - repeated exposure No information available.

Aspiration hazard No information available.

12. Ecological information

Ecotoxicity

Chemical name	Algae/aquatic plants	Fish	Toxicity to microorganisms	Crustacea
2-Propanol, 1-chloro-, phosphate (3:1) 13674-84-5	EC50: =45mg/L (72h, <i>Desmodesmus subspicatus</i>) EC50: =4mg/L (96h, <i>Pseudokirchneriella subcapitata</i>)	LC50: =56.2mg/L (96h, <i>Brachydanio rerio</i>) LC50: =98mg/L (96h, <i>Pimephales promelas</i>) LC50: =30mg/L (96h, <i>Poecilia reticulata</i>)	-	EC50: =63mg/L (48h, <i>Daphnia magna</i>)
1,2-Propanediol 57-55-6	EC50: =19000mg/L (96h, <i>Pseudokirchneriella subcapitata</i>)	LC50: =51600mg/L (96h, <i>Oncorhynchus mykiss</i>) LC50: 41 - 47mL/L (96h, <i>Oncorhynchus mykiss</i>) LC50: =51400mg/L (96h, <i>Pimephales promelas</i>) LC50: =710mg/L (96h, <i>Pimephales promelas</i>)	-	EC50: >1000mg/L (48h, <i>Daphnia magna</i>)
1,2,3-Propanetriol 56-81-5	-	LC50: 51 - 57mL/L (96h, <i>Oncorhynchus mykiss</i>)	-	-
1H-Imidazole, 1,2-dimethyl- 1739-84-0	-	LC50: =63.03mg/L (96h, <i>Danio rerio</i>)	-	-

Persistence and degradability

Bioaccumulation No information available.

Component Information

Chemical name	Partition coefficient
2-Propanol, 1-chloro-, phosphate (3:1) 13674-84-5	2.68
1,2-Propanediol 57-55-6	-1.07
1,2,3-Propanetriol 56-81-5	-1.75
1H-Imidazole, 1,2-dimethyl- 1739-84-0	0.11

Mobility in soil

Other adverse effects No information available.

13. Disposal considerations

Waste treatment methods

Waste from residues/unused products	Dispose of waste in accordance with environmental legislation. Dispose of in accordance with local regulations.
Contaminated packaging	Do not reuse empty containers.

14. Transport information

DOT Not regulated

15. Regulatory information**Safety, health and environmental regulations/legislation specific for the substance or mixture****International Regulations**

The Montreal Protocol on Substances that Deplete the Ozone Layer Not applicable

The Stockholm Convention on Persistent Organic Pollutants Not applicable

The Rotterdam Convention Not applicable

International Inventories

TSCA	Does not comply
DSL/NDSL	Does not comply
EINECS/ELINCS	Does not comply
ENCS	Does not comply
IECSC	Does not comply
KECL	Does not comply
PICCS	Does not comply
AICS	Does not comply

Legend:

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

AICS - Australian Inventory of Chemical Substances

US Federal Regulations**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Should this product meet EPCRA 311/312 Tier reporting criteria at 40 CFR 370, refer to Section 2 of this SDS for appropriate classifications.

CWA (Clean Water Act)

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

US State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals.:

Chemical name	California Proposition 65
Ethylene glycol - 107-21-1	Developmental

U.S. State Right-to-Know Regulations

Chemical name	New Jersey	Massachusetts	Pennsylvania
1,2,3-Propanetriol 56-81-5	X	X	X
1,2-Propanediol 57-55-6	X	-	X
Water 7732-18-5	-	-	X
Ethylene glycol 107-21-1	X	X	X

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. Other information

NFPA	Health hazards 2	Flammability 0	Instability 0	Special hazards -
HMIS	Health hazards 1	Flammability 0	Physical hazards 0	Personal protection X

Key or legend to abbreviations and acronyms used in the safety data sheet

Legend Section 8: Exposure controls/personal protection

TWA	TWA (time-weighted average)	STEL	STEL (Short Term Exposure Limit)
Ceiling	Maximum limit value	*	Skin designation

Key literature references and sources for data used to compile the SDS

- Agency for Toxic Substances and Disease Registry (ATSDR)
- U.S. Environmental Protection Agency ChemView Database
- European Food Safety Authority (EFSA)
- EPA (Environmental Protection Agency)
- Acute Exposure Guideline Level(s) (AEGl(s))
- U.S. Environmental Protection Agency Federal Insecticide, Fungicide, and Rodenticide Act
- U.S. Environmental Protection Agency High Production Volume Chemicals
- Food Research Journal
- Hazardous Substance Database
- International Uniform Chemical Information Database (IUCLID)
- Japan GHS Classification
- Australia National Industrial Chemicals Notification and Assessment Scheme (NICNAS)
- NIOSH (National Institute for Occupational Safety and Health)

National Library of Medicine's ChemID Plus (NLM CIP)
National Library of Medicine's PubMed database (NLM PUBMED)
National Toxicology Program (NTP)
New Zealand's Chemical Classification and Information Database (CCID)
Organization for Economic Co-operation and Development Environment, Health, and Safety Publications
Organization for Economic Co-operation and Development High Production Volume Chemicals Program
Organization for Economic Co-operation and Development Screening Information Data Set
World Health Organization

Revision date 20-Jun-2023

Revision Note**Disclaimer**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

End of Safety Data Sheet