

SAFETY DATA SHEET



COSMO PU-100.130
COSMO PU-100.131

(COSMOPUR 819 white)
(COSMOPUR 819 black)

Section 1. Identification

GHS product identifier : COSMO PU-100.130
COSMO PU-100.131

(COSMOPUR 819 white)
(COSMOPUR 819 black)

Product code : Not available.

Other means of identification : Not available.

Product type : Liquid.

Relevant identified uses of the substance or mixture and uses advised against

Product use : Adhesive.

Area of application : Professional applications.


Supplier's details : Weiss USA LLC
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Section 2. Hazards identification



OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture :  H315 SKIN IRRITATION - Category 2
H319 EYE IRRITATION - Category 2A
H334 RESPIRATORY SENSITIZATION - Category 1
H317 SKIN SENSITIZATION - Category 1
H335 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
H372 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

GHS label elements

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Section 2. Hazards identification

Hazard pictograms	:	 
Signal word	:	Danger
Hazard statements	:	<p>H315 - Causes skin irritation. H317 - May cause an allergic skin reaction. H319 - Causes serious eye irritation. H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled. H335 - May cause respiratory irritation. H372 - Causes damage to organs through prolonged or repeated exposure. (respiratory tract)</p>
Precautionary statements		
Prevention	:	<p>P280 - Wear protective gloves: 1 - 4 hours (breakthrough time): Nitrile gloves. (>=0.35 mm) Protective hand cream.. Wear eye or face protection. P284 - Wear respiratory protection: Recommended: A respirator is not needed under normal and intended conditions of product use. Use appropriate respiratory protection if there is a risk of exceeding any exposure limits. Filter A2 P2. P271 - Use only outdoors or in a well-ventilated area. P260 - Do not breathe vapor. P270 - Do not eat, drink or smoke when using this product. P264 - Wash thoroughly after handling. P272 - Contaminated work clothing must not be allowed out of the workplace.</p>
Response	:	<p>P314 - Get medical advice or attention if you feel unwell. P304 + P340, P312 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell. P342 + P311 - If experiencing respiratory symptoms: Call a POISON CENTER or doctor. P362 + P364 - Take off contaminated clothing and wash it before reuse. P363 - Wash contaminated clothing before reuse. P302 + P352 - IF ON SKIN: Wash with plenty of water. P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337 + P313 - If eye irritation persists: Get medical advice or attention.</p>
Storage	:	<p>P405 - Store locked up. P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.</p>
Disposal	:	<p>P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.</p>
Hazards not otherwise classified	:	None known.

Section 3. Composition/information on ingredients

Substance/mixture	:	Mixture
Other means of identification	:	Not available.

Section 3. Composition/information on ingredients

Ingredient name	Other names	%	CAS number
4,4'-methylenediphenyl diisocyanate	-	≥1 - ≤10	101-68-8
o-(p-isocyanatobenzyl)phenyl isocyanate	-	≥1 - ≤7	5873-54-1
Isocyanic acid, polymethylenepolyphenylene ester	-	≥1 - ≤5.5	9016-87-9
propylene carbonate	-	≥1 - ≤5	108-32-7
titanium dioxide	-	≥0 - ≤3	13463-67-7
2,2'-methylenediphenyl diisocyanate	-	≥0,1 - <1	2536-05-2

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health and hence require reporting in this section.

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours. In the event of any complaints or symptoms, avoid further exposure.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Section 4. First aid measures

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma

Skin contact : Adverse symptoms may include the following:
irritation
redness

Ingestion : No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Specific treatments : No specific treatment.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Carbon dioxide (CO₂). Powder. Use water spray, fog or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : In a fire or if heated, a pressure increase will occur and the container may burst.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides
Isocyanate
Hydrogen cyanide (HCN).
Toxic gases

Section 5. Fire-fighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Remark** : Not considered to be a product presenting a risk of explosion. Heating may cause an explosion.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Section 7. Handling and storage

- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 20 to 25°C (68 to 77°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
4,4'-methylenediphenyl diisocyanate	ACGIH TLV (United States, 3/2019). TWA: 0.005 ppm 8 hours. NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m ³ 10 hours. TWA: 0.005 ppm 10 hours. CEIL: 0.2 mg/m ³ 10 minutes. CEIL: 0.02 ppm 10 minutes. OSHA PEL (United States, 5/2018). CEIL: 0.02 ppm CEIL: 0.2 mg/m ³
o-(p-isocyanatobenzyl)phenyl isocyanate	None.
Isocyanic acid, polymethylenepolyphenylene ester	None.
propylene carbonate	None.
titanium dioxide	ACGIH TLV (United States, 3/2019). TWA: 10 mg/m ³ 8 hours. OSHA PEL (United States, 5/2018). TWA: 15 mg/m ³ 8 hours. Form: Total dust
2,2'-methylenediphenyl diisocyanate	None.

- Appropriate engineering controls** : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Section 8. Exposure controls/personal protection

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face 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, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. 1 - 4 hours (breakthrough time): Nitrile gloves. (≥ 0.35 mm) Protective hand cream.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. Recommended: Long-sleeved protective clothing. Safety shoes.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: A respirator is not needed under normal and intended conditions of product use. Use appropriate respiratory protection if there is a risk of exceeding any exposure limits. Filter A2 P2

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid. [Paste-like.]
- Color** : According to specification
- Odor** : Characteristic.
- Odor threshold** : Not available.
- pH** : Not applicable.
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Not available.
- Evaporation rate** : Not applicable.
- Flammability (solid, gas)** : Not applicable.
- Lower and upper explosive (flammable) limits** : Not available.
- Vapor pressure** : Not available.
- Vapor density** : Not available.

Section 9. Physical and chemical properties

Relative density	: Not available.
Density	: 1.52 g/cm³ [20°C (68°F)]
Solubility	: Insoluble in the following materials: cold water and hot water.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Not available.
Flow time (ISO 2431)	: Not available.

Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Hazardous reactions or instability may occur under certain conditions of storage or use. Hazardous polymerization may occur under certain conditions of storage or use. May polymerize on exposure or in contact to the following: heat [T>~260°C (>~500°F)]
Conditions to avoid	: Protect from moisture. Keep away from heat and direct sunlight. T > 50°C (>122°F).
Incompatible materials	: Keep away from the following materials to prevent strong exothermic reactions: alcohols, amines, alkalis, acids, water.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
4,4'-methylenediphenyl diisocyanate	LD50 Dermal	Rabbit	>9400 mg/kg	-
o-(p-isocyanatobenzyl)phenyl isocyanate	LD50 Oral	Rat	9200 mg/kg	-
	LD50 Dermal	Rabbit	>9400 mg/kg	-
Isocyanic acid, polymethylenepolyphenylene ester	LD50 Oral	Rat	>2000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	490 mg/m³	4 hours
propylene carbonate	LD50 Dermal	Rabbit	>9400 mg/kg	-
	LD50 Oral	Rat	49 g/kg	-
	LD50 Dermal	Rabbit	>2000 mg/kg	-

Section 11. Toxicological information

titanium dioxide	LD50 Oral LC50 Inhalation Dusts and mists LD50 Dermal	Rat Rat Rabbit	>5000 mg/kg >6.8 mg/l >5000 mg/kg	- 4 hours -
2,2'-methylenediphenyl diisocyanate	LD50 Oral LD50 Dermal LD50 Oral	Rat Rabbit Rat Rabbit	>5000 mg/kg >5000 mg/kg >9400 mg/kg	- - -
	LD50 Oral	Rat	>2000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
4,4'-methylenediphenyl diisocyanate	Eyes - Moderate irritant	Rabbit	-	100 mg	-
	Skin - Irritant	Rabbit	-	-	-
o-(p-isocyanatobenzyl)phenyl isocyanate	Skin - Irritant	Rabbit	-	-	-
Isocyanic acid, polymethylenepolyphenylene ester	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Skin - Irritant	Rabbit	-	-	-
propylene carbonate	Eyes - Moderate irritant	Rabbit	-	60 mg	-
2,2'-methylenediphenyl diisocyanate	Skin - Irritant	Rabbit	-	-	-
	Eyes - Irritant	Rabbit	-	-	-

Sensitization

Product/ingredient name	Route of exposure	Species	Result
4,4'-methylenediphenyl diisocyanate	skin	Mouse	Sensitizing
	Respiratory	Guinea pig	Sensitizing
o-(p-isocyanatobenzyl)phenyl isocyanate	skin	Mouse	Sensitizing
Isocyanic acid, polymethylenepolyphenylene ester	skin	Guinea pig	Sensitizing
2,2'-methylenediphenyl diisocyanate	skin	Mouse	Sensitizing

Mutagenicity

Product/ingredient name	Test	Experiment	Result
propylene carbonate	OECD 471 Bacterial Reverse Mutation Test	Experiment: In vitro Subject: Bacteria	Negative
	OECD 474 Mammalian Erythrocyte Micronucleus Test	Experiment: In vitro Subject: Mammalian-Animal	Negative
2,2'-methylenediphenyl diisocyanate	OECD 471 Bacterial Reverse Mutation Test	Subject: Bacteria	Negative

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Section 11. Toxicological information

Product/ingredient name	OSHA	IARC	NTP
4,4'-methylenediphenyl diisocyanate	-	3	-
Isocyanic acid, polymethylenepolyphenylene ester	-	3	-
titanium dioxide	-	2B	-

Reproductive toxicity

Conclusion/Summary : ☒ Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
4,4'-methylenediphenyl diisocyanate	Category 3	-	Respiratory tract irritation
o-(p-isocyanatobenzyl)phenyl isocyanate	Category 3	-	Respiratory tract irritation
Isocyanic acid, polymethylenepolyphenylene ester	Category 3	-	Respiratory tract irritation
2,2'-methylenediphenyl diisocyanate	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
4,4'-methylenediphenyl diisocyanate	Category 1	inhalation	respiratory tract
o-(p-isocyanatobenzyl)phenyl isocyanate	Category 1	-	respiratory tract
Isocyanic acid, polymethylenepolyphenylene ester	Category 1	-	respiratory tract
2,2'-methylenediphenyl diisocyanate	Category 1	-	respiratory tract

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : ☒ May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin contact : Causes skin irritation. May cause an allergic skin reaction.

Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
wheezing and breathing difficulties
asthma
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Product/ingredient name	Result	Species	Dose	Exposure
titanium dioxide	Chronic NOAEL Oral	Rat	3500 mg/kg	90 days

- General** : Causes damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
COSMO PU-100.130	23527.2	4101.2	N/A	N/A	5.1
4,4'-methylenediphenyl diisocyanate	9200	N/A	N/A	N/A	1.5
o-(p-isocyanatobenzyl)phenyl isocyanate	2500	N/A	N/A	N/A	1.5
Isocyanic acid, polymethylenepolyphenylene ester	49000	N/A	N/A	N/A	1.5
propylene carbonate	N/A	2500	N/A	N/A	N/A
2,2'-methylenediphenyl diisocyanate	2500	N/A	N/A	N/A	1.5

Section 11. Toxicological information

Other information

: Adverse symptoms may include the following:
Skin contact: inflammation. dryness. skin lesion/eczema.
Inhalation: headache. drowsiness/fatigue dizziness/vertigo. unconsciousness.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
4,4'-methylenediphenyl diisocyanate	NOEC 1640 mg/l Acute EC50 1640 mg/l	Algae - Desmodesmus subspicatus Algae - Desmodesmus subspicatus	72 hours 72 hours
o-(p-isocyanatobenzyl)phenyl isocyanate	Acute LC50 >1000 mg/l Acute LC50 >1000 mg/l	Fish - Brachydanio rerio Fish - Brachydanio rerio	96 hours 96 hours
Isocyanic acid, polymethylenepolyphenylene ester	Acute NOEC >10 mg/l NOEC >10 mg/l	Daphnia - Daphnia magna Daphnia - Daphnia magna	21 days 21 days
propylene carbonate	Acute EC50 >1640 mg/l Acute LC50 >1000 mg/l EC50 >900 mg/l	Algae - Scenedesmus subspicatus Fish - Brachydanio rerio Algae - desmodesmus subspicatus	72 hours 96 hours 72 hours
titanium dioxide	LC50 >1000 mg/l Acute EC50 >1000 mg/l Acute LC50 3 mg/l Fresh water Acute LC50 6.5 mg/l Fresh water	Fish - Cyprinus caprio Daphnia - Daphnia magna Crustaceans - Ceriodaphnia dubia - Neonate Daphnia - Daphnia pulex - Neonate	96 hours 48 hours 48 hours 48 hours
2,2'-methylenediphenyl diisocyanate	Acute LC50 >1000000 µg/l Marine water NOEC >10 mg/l Acute EC50 >1640 mg/l Acute LC50 >1000 mg/l	Fish - Fundulus heteroclitus Daphnia - Daphnia magna Algae - Scenedesmus subspicatus Fish - Brachydanio rerio	96 hours 21 days 72 hours 96 hours

Conclusion/Summary : Not available.

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
4,4'-methylenediphenyl diisocyanate	OECD 302C Inherent Biodegradability: Modified MITI Test (II)	0 % - 28 days	-	-
o-(p-isocyanatobenzyl)phenyl isocyanate	OECD 302C Inherent Biodegradability: Modified MITI	0 % - 28 days	-	-

Section 12. Ecological information

Isocyanic acid, polymethylenepolyphenylene ester	Test (II) OECD 302C Inherent Biodegradability: Modified MITI Test (II)	0 % - 28 days	-	-
propylene carbonate	301E Ready Biodegradability - Modified OECD Screening Test 301A Ready Biodegradability - DOC Die-Away Test	94 % - 28 days	-	-
2,2'-methylenediphenyl diisocyanate	OECD 302C Inherent Biodegradability: Modified MITI Test (II)	90 to 100 % - 14 days	-	-
		0 % - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
4,4'-methylenediphenyl diisocyanate	-	-	Not readily
o-(p-isocyanatobenzyl)phenyl isocyanate	-	-	Not readily
Isocyanic acid, polymethylenepolyphenylene ester	-	-	Not readily
propylene carbonate	-	-	Readily
titanium dioxide	-	-	Not readily
2,2'-methylenediphenyl diisocyanate	-	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
4,4'-methylenediphenyl diisocyanate	4.51	200	low
o-(p-isocyanatobenzyl)phenyl isocyanate	4.51	200	low
Isocyanic acid, polymethylenepolyphenylene ester	-	<14	low
propylene carbonate	-0.41	-	low
2,2'-methylenediphenyl diisocyanate	5.22	200	low

Mobility in soil

Soil/water partition
coefficient (K_{oc}) : Not available.

Section 12. Ecological information

Other adverse effects : No known significant effects or critical hazards.


Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. 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. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

Additional information

DOT Classification :  **Reportable quantity** 39376.3 lbs / 17876.8 kg [3106.9 gal / 11761.1 L]. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

U.S. Federal regulations : **TSCA 8(a) PAIR**: 4,4'-methylenediphenyl diisocyanate; o-(p-isocyanatobenzyl)phenyl isocyanate; acetaldehyde; Siloxanes and Silicones, di-Me, reaction products with silica
TSCA 8(a) CDR Exempt/Partial exemption: Not determined
TSCA 8(c) calls for record of SAR: 4,4'-methylenediphenyl diisocyanate; o-(p-isocyanatobenzyl)phenyl isocyanate; Isocyanic acid, polymethylenepolyphenylene ester; 2,2'-methylenediphenyl diisocyanate
United States inventory (TSCA 8b): Not determined.
Clean Water Act (CWA) 307: 4,4'-methylenediphenyl diisocyanate
Clean Water Act (CWA) 311: acetaldehyde; propylene oxide

Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

SARA 302/304

Composition/information on ingredients

Name	%	EHS	SARA 302 TPQ		SARA 304 RQ	
			(lbs)	(gallons)	(lbs)	(gallons)
Furan propylene oxide	≤0.1	Yes.	500	64.1	100	12.8
	≤0.1	Yes.	10000	1444.3	100	14.4

SARA 304 RQ : 425061.6 lbs / 192978 kg [33539.1 gal / 126959.2 L]

SARA 311/312

Classification : **SKIN IRRITATION** - Category 2
EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

Composition/information on ingredients

Name	%	Classification
4,4'-methylenediphenyl diisocyanate	≤10	ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED

Section 15. Regulatory information

o-(p-isocyanatobenzyl)phenyl isocyanate	≤7	EXPOSURE) - Category 1 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
Isocyanic acid, polymethylenepolyphenylene ester	≤5.5	ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
propylene carbonate	≤5	EYE IRRITATION - Category 2A
titanium dioxide	≤3	CARCINOGENICITY - Category 2
2,2'-methylenediphenyl diisocyanate	<1	ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	4,4'-methylenediphenyl diisocyanate	101-68-8	≤10
	Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	≤5.5
Supplier notification	4,4'-methylenediphenyl diisocyanate	101-68-8	≤10
	Isocyanic acid, polymethylenepolyphenylene ester	9016-87-9	≤5.5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts

: The following components are listed: CALCIUM CARBONATE; MARBLE DUST; METHYLENE BISPHENYL ISOCYANATE; DIPHENYLMETHANE DIISOCYANATE; MDI; TITANIUM DIOXIDE; TIN DIOXIDE DUST

New York

: The following components are listed: Methylene diphenyl diisocyanate

New Jersey

: The following components are listed: CALCIUM CARBONATE; LIMESTONE; METHYLENE BISPHENYL ISOCYANATE; BENZENE, 1,1'-METHYLENEBIS [4-ISOCYANATO-; DIISOCYANATES; METHYLENE DIPHENYL DIISOCYANATE (POLYMERIC); ISOCYANIC ACID, POLYMETHYLENENEPOLYPHENYLENE ESTER; DIISOCYANATES; TITANIUM DIOXIDE; TITANIUM OXIDE (TiO₂)

Pennsylvania

: The following components are listed: LIMESTONE; BENZENE, 1,1'-METHYLENEBIS [4-ISOCYANATO-; TITANIUM OXIDE

Section 15. Regulatory information

California Prop. 65

⚠ WARNING: This product can expose you to chemicals including Titanium dioxide, Furan, acetaldehyde, Cobalt metal powder and Propylene oxide, which are known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Ingredient name	No significant risk level	Maximum acceptable dosage level
Titanium dioxide	-	-
Furan	-	-
acetaldehyde	Yes.	-
Cobalt metal powder	-	-
Propylene oxide	-	-

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

Hazardous Material Information System (U.S.A.)

Health	*	3
Flammability		0
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

National Fire Protection Association (U.S.A.)



Section 16. Other information

Procedure used to derive the classification

Classification	Justification
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2A	Calculation method
RESPIRATORY SENSITIZATION - Category 1	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	Calculation method

History

Date of issue/Date of revision : 08/27/2020

Date of previous issue : 08/24/2015

Version : 2

Key to abbreviations :

- ATE = Acute Toxicity Estimate
- AMP = Acceptable maximum peak above the acceptable ceiling concentration for an 8-hr shift
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- N/A = Not available
- UN = United Nations

References : HCS (U.S.A.)- Hazard Communication Standard
International transport regulations

Indicates information that has changed from previously issued version.

Notice to reader

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Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.