

SAFETY DATA SHEET

Canusa HBE-HT Repair Cartridge - Base

Section 1. Identification

Product identifier : Canusa HBE-HT Repair Cartridge - Base
Product code : Not available.
Other means of identification : Not available.

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

Identified uses	
Industrial application of coatings and inks by other than spraying Industrial application of coatings and inks by spraying	
Uses advised against	Reason
Consumer uses	Product is not intended for consumer use.

Supplier's details : SFL Canusa Canada Ltd., 455 West Airport Road, Huntsville, ON, P1H 1Y7, Canada, Tel.: (+1) 705-789-1787
Seal For Life India Private Ltd., Plot17, GIDC Savli, Vadodara, Gujarat, Baroda, India - 391775, Tel.: +91 266 726 4721
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Seal For Life Industries, 10010 Cypress Creek Parkway Houston, TX 77070, USA, Tel.: +1 713-999-5090

Distributor / Importer :

Emergency telephone number (with hours of operation) : +1 705-789-1787 (CA: 8:00 - 17:00)
+91 266 726 4721 (IN: 08:00 - 17:00)
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For emergencies only, call CHEMTREC (24 hours): In USA / Canada 1-800-424-9300; Outside USA +1 703-741-5970

Section 2. Hazard identification

Classification of the substance or mixture : SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : Causes skin irritation.
May cause an allergic skin reaction.
Causes serious eye irritation.
May cause cancer.
Causes damage to organs through prolonged or repeated exposure.

Precautionary statements

Section 2. Hazard identification

- Prevention** : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves, protective clothing and eye or face protection. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.
- Response** : IF exposed or concerned: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.
- Storage** : Store locked up.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Section 3. Composition/information on ingredients

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

Ingredient name	Synonyms	% (w/w)	CAS number
Quartz	alpha-quartz; Silica, crystalline (quartz); Silica, Crystalline Quartz; SILICA, CRYSTALLINE, QUARTZ; Silica-Crystalline, Quartz; Silica - Crystalline Quartz; Silica-Crystalline : Quartz; Silica, crystalline - quartz	≥30 - ≤60	14808-60-7
Phenol, polymer with formaldehyde, glycidyl ether	Phenol, polymer with formaldehyde, oxiranylmethyl ether; phenol-formaldehyde polymer glycidyl ether; Etherification products of glycidyl group of (polymer of formaldehyde / phenol); Glycidyl ether modification products with epichlorohydrin or 2-methylepichlorohydrin of {polycondensation products of [(polycondensation products of phenol / formaldehyde) or alkyl(C1-9) phenol] / formaldehyde}; Etherification products of oxiran-2-ylmethyl group of (polymer of formaldehyde / phenol); Phenol polymer with formaldehyde, glycidyl ether; GLYCIDYL EPOXY NOVALAC RESIN; PHENOL, NOVOLAC TYPE EPOXY RESIN; POLYMER OF EPICHLOROHYDRIN AND PHENOL-FORMALDEHYDE; POLYMER, PHENOL FORMALDEHYDE WITH GLYCIDYL ETHER; Phenol,polymer with formaldehyde glycidyl ether	≥30 - ≤60	28064-14-4
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	Oxirane, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(oxymethylene)] bis-; 2,2'-[(2,2-Dimethyl-1,3-propanediyl)bis(oxymethylene)]; Neopentyl glycol diglycidyl ether; 2,2'-	≥5 - ≤10	17557-23-2

Section 3. Composition/information on ingredients

	[(2,2-dimethylpropane-1,3-diyl)bis (oxymethanediy)]dioxirane; 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis (oxymethylene)]bisoxirane; 2,2'-[(2,2-dimethylpropane-1,3-diyl)bis (oxymethylene)]dioxirane; Propane, 1,3-bis(2,3-epoxypropoxy)-2,2-dimethyl-; Oxirane, 2,2-{(2,2-dimethyl-1,3-propanediyl)bis (oxymethylene)}bis-; 2,2'-(2,2-Dimethyl-1,3 propanediyl)bis (oxymethylene)bisoxirane; 2,2'-[(2,2-Dimethyl-1,3-propanediyl)bis (oxymethylene)]bis[oxirane]; 2,2'-{[(2,2-Dimethylprop-1,3-diyl)dioxy] dimethyl}dioxirane		
Titanium dioxide	Titanium oxide; Titanium oxide (TiO ₂); CI 77891; Titanium peroxide; Rutile; C.I. Pigment White 6; titanium dioxide coated with isopropoxytitanium triisostearate, containing by weight 1,5 % or more but not more than 2,5 % of isopropoxytitanium triisostearate; glass flakes (CAS RN 65997-17-3): — of a thickness of 0,3 µm or more but not more than 10 µm, and — coated with titanium dioxide (CAS RN 13463-67-7) or iron oxide (CAS RN 18282- 10-5); titanium dioxide, other than those of heading 3206 11 00; titanium(IV) oxide, other than those of heading 3206 11 00; titanium dioxide, containing 80% or more by weight of titanium dioxide calculated on the dry matter	≥0.1 - ≤1	13463-67-7
Epichlorhydrin-bisphenol A resin	epoxy resin; 4,4'-Isopropylidenediphenol, oligomeric reaction products with 1-chloro-2,3-epoxypropane; Phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane; Phenol, 4,4'-(1-methylethylidene)bis-, polymer with (chloromethyl)oxirane; phenol, 4,4'-(1-methylethylidene)bis-, polymer with 2-(chloromethyl)oxirane; oxirane, (chloromethyl)-, polymer with 4,4'-(1-methylethylidene)bis [phenol]; Bisphenol A, epichlorhydrin polymer; Epichlorhydrin, bisphenol A resin; poly{(4,4'-propane-2,2-diyl)diphenol)-co-[2-(chloromethyl)oxirane]}; BADGE; DGEbPA; diglycidyl ether of bis-phenol A; bisphenol A diglycidyl ether resin; (bisphenol A)-epichloridrin copolymer; poly[4,4'-(1-methylethylidene)bisphenol-co-(chloromethyl)oxirane]	≥0.1 - ≤1	25068-38-6

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

Section 3. Composition/information on ingredients

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

Occupational exposure limits, if available, are listed in Section 8.

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 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 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.
- 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. 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. 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** : No known significant effects or critical hazards.
- 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** : No specific data.
- 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** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.

Section 4. First-aid measures

- 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** : Use an extinguishing agent suitable for the surrounding fire.

- Unsuitable extinguishing media** : None known.

- 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
halogenated compounds
metal oxide/oxides

- 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.

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.

Section 6. Accidental release measures

- 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 should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. 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.
- 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 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
Quartz	<p>CA British Columbia Provincial (Canada, 6/2022). [Silica, Crystalline - alpha quartz and Cristobalite Respirable Revised 2006] TWA: 0.025 mg/m³ 8 hours. Form: Respirable</p> <p>CA Quebec Provincial (Canada, 6/2021). [Silica Crystalline -Quartz] TWAEV: 0.1 mg/m³ 8 hours. Form: Respirable dust.</p> <p>CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 0.025 mg/m³ 8 hours. Form: Respirable particulate</p> <p>CA Ontario Provincial (Canada, 6/2019). [Silica, Crystalline (Quartz/Tripoli)] TWA: 0.1 mg/m³ 8 hours. Form: Respirable particulate matter.</p> <p>CA Saskatchewan Provincial (Canada, 7/2013). TWA: 0.05 mg/m³ 8 hours. Form:</p>

Section 8. Exposure controls/personal protection

Titanium dioxide	respirable fraction CA British Columbia Provincial (Canada, 10/2019). TWA: 3 mg/m ³ 8 hours. Form: Respirable dust TWA: 10 mg/m ³ 8 hours. Form: Total dust CA Quebec Provincial (Canada, 7/2019). TWAEV: 10 mg/m ³ 8 hours. Form: Total dust. CA Alberta Provincial (Canada, 6/2018). 8 hrs OEL: 10 mg/m ³ 8 hours. CA Ontario Provincial (Canada, 6/2019). TWA: 10 mg/m ³ 8 hours. CA Saskatchewan Provincial (Canada, 7/2013). STEL: 20 mg/m ³ 15 minutes. TWA: 10 mg/m ³ 8 hours.
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Biological exposure indices

No exposure indices known.

- Appropriate engineering controls** : 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

- 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.
 - 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.
 - 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.

Section 8. Exposure controls/personal protection

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.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	: Liquid. [Viscous liquid.]
Color	: Black.
Odor	: Not available.
Odor threshold	: Not available.
pH	: Not applicable.
Melting point/freezing point	: Not available.
Boiling point, initial boiling point, and boiling range	: Not available.
Flash point	: Not applicable.
Flammability	: Not available.
Lower and upper explosion limit/flammability limit	: Not available.
Vapor pressure	: Not applicable.
Relative vapor density	: Not available.
Relative density	: 1.5
Solubility in water	: Not available.
Miscible with water	: No.
Partition coefficient: n-octanol/water	: Not applicable.
Auto-ignition temperature	: Not applicable.
Decomposition temperature	: Not available.
Viscosity	: Not available.

Particle characteristics

Median particle size : Not applicable.

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	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: No specific data.
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
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane Titanium dioxide	LD50 Oral	Rat	4500 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat	6.8 mg/l	4 hours
Epichlorhydrin-bisphenol A resin	LD50 Dermal	Rabbit	>5000 mg/kg	-
	LD50 Oral	Rat	>5000 mg/kg	-
	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Female	>2000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Titanium dioxide	Skin - Mild irritant	Human	-	72 hours 300 ug l	-
Epichlorhydrin-bisphenol A resin	Eyes - Mild irritant	Rabbit	-	100 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 uL	-
	Skin - Severe irritant	Rabbit	-	24 hours 2 mg	-

Sensitization

Product/ingredient name	Route of exposure	Species	Result
Epichlorhydrin-bisphenol A resin	skin	Mouse	Sensitizing

Mutagenicity

Product/ingredient name	Test	Experiment	Result
Epichlorhydrin-bisphenol A resin	-	Experiment: In vitro Subject: Bacteria	Positive
	-	Experiment: In vitro Subject: Mammalian-Animal Cell: Somatic	Positive
	-	Experiment: In vivo Subject: Mammalian-Animal Cell: Germ	Negative

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Epichlorhydrin-bisphenol A resin	Negative - Dermal - TC	Mouse - Female	0.1 mg/kg	2 years; 3 days per week
	Negative - Dermal - TC	Rat - Female	1 mg/kg	2 years; 5 days per week
	Negative - Oral - TC	Rat - Male, Female	15 mg/kg	2 years; 7 days per week

Classification

Product/ingredient name	IARC	NTP	ACGIH
Quartz	1	Known to be a human carcinogen.	A2
Titanium dioxide	2B	-	A4

Reproductive toxicity

Section 11. Toxicological information

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Epichlorhydrin-bisphenol A resin	Negative	Negative	Negative	Rat - Male, Female	Oral	-

Teratogenicity

Product/ingredient name	Result	Species	Dose	Exposure
Epichlorhydrin-bisphenol A resin	Negative - Dermal	Rabbit - Female	-	-
	Negative - Oral	Rabbit - Female	-	-
	Negative - Oral	Rat - Female	-	-

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Route of exposure	Target organs
Quartz	Category 1	-	-

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- 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

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : No specific data.
- 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

Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Titanium dioxide	Chronic NOAEL Oral	Rat	3500 mg/kg	90 days
	Chronic NOAEL Inhalation Dusts and mists	Rat	>6.8 mg/l	90 days
Epichlorhydrin-bisphenol A resin	Sub-chronic NOAEL Dermal	Rat - Male, Female	10 mg/kg	-
	Sub-chronic NOAEL Oral	Rat - Male, Female	50 mg/kg	-

- 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** : May cause cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : 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)
Canusa HBE-HT Repair Cartridge - Base	14555.8	N/A	N/A	N/A	N/A
1,3-bis(2,3-epoxypropoxy)-2,2-dimethylpropane	4500	N/A	N/A	N/A	N/A
Titanium dioxide	N/A	N/A	N/A	N/A	6.8
Epichlorhydrin-bisphenol A resin	2500	2500	N/A	N/A	N/A

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Titanium dioxide	Acute LC50 3 mg/l Fresh water	Crustaceans - <i>Ceriodaphnia dubia</i> - Neonate	48 hours
	Acute LC50 6.5 mg/l Fresh water	Daphnia - <i>Daphnia pulex</i> - Neonate	48 hours
	Acute LC50 >1000000 µg/l Marine water	Fish - <i>Fundulus heteroclitus</i>	96 hours
Epichlorhydrin-bisphenol A resin	Acute EC50 11 mg/l Fresh water	Aquatic plants	72 hours
	Acute EC50 1.8 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 2 mg/l	Fish	96 hours
	Acute NOEC 4.2 mg/l Fresh water	Aquatic plants	72 hours
	Chronic NOEC 0.3 mg/l Fresh water	Daphnia	21 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
Epichlorhydrin-bisphenol A resin	OECD 301F 301F Ready Biodegradability - Manometric Respirometry Test	5 % - Not readily - 28 days	-	Activated sludge

Section 12. Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Epichlorhydrin-bisphenol A resin	Fresh water 4.83 days, pH 4, 25°C (OECD Test Guideline 111) Fresh water 7.1 days, pH 9, 25°C (OECD Test Guideline 111) Fresh water 3.58 days, pH 7, 25°C (OECD Test Guideline 111)	-	Not readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Epichlorhydrin-bisphenol A resin	2.64 to 3.78	31	Low

Mobility in soil









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

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

	TDG Classification	DOT Classification	IMDG	IATA
UN number	UN3082	UN3082	UN3082	UN3082
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (titanium dioxide)	Environmentally hazardous substance, liquid, n.o.s.	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (titanium dioxide)	Environmentally hazardous substance, liquid, n.o.s. (titanium dioxide)
Transport hazard class(es)	9  	9  	9  	9  
Packing group	III	III	III	III
Environmental hazards	Yes.	Yes.	Yes.	Yes.

Additional information

Section 14. Transport information

- TDG Classification** : Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark).
Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.
Explosive Limit and Limited Quantity Index 5
Special provisions 16, 99
- DOT Classification** : Non-bulk packages of this product are not regulated as hazardous materials unless transported by inland waterway. This product is not regulated as a hazardous material when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.
Limited quantity Yes.
Packaging instruction Exceptions: 155. Non-bulk: 203. Bulk: 241.
Special provisions 8, 146, 173, 335, 441, IB3, T4, TP1, TP29
- IMDG** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
Emergency schedules F-A, S-F
Special provisions 274, 335, 969
- IATA** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.
Quantity limitation Passenger and Cargo Aircraft: 450 L. Packaging instructions: 964. Cargo Aircraft Only: 450 L. Packaging instructions: 964. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y964.
Special provisions A97, A158, A197, A215
- 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

Canadian lists

- Canadian NPRI** : None of the components are listed.
CEPA Toxic substances : None of the components are listed.

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.

Inventory list

- Australia** : Not determined.
Canada : All components are listed or exempted.
China : All components are listed or exempted.

Section 15. Regulatory information

Eurasian Economic Union	: Russian Federation inventory: Not determined.
Japan	: Japan inventory (CSCL) : Not determined. Japan inventory (ISHL) : Not determined.
New Zealand	: All components are listed or exempted.
Philippines	: Not determined.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: Not determined.
Turkey	: Not determined.
United States	: Not determined.
Viet Nam	: All components are listed or exempted.

Section 16. Other information

History

Date of printing	: 6/26/2023
Date of issue/Date of revision	: 6/26/2023
Date of previous issue	: No previous validation
Version	: 1

Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals HPR = Hazardous Products Regulations 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 SGG = Segregation Group UN = United Nations
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Procedure used to derive the classification

Classification	Justification
SKIN IRRITATION - Category 2	Calculation method
EYE IRRITATION - Category 2A	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
CARCINOGENICITY - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1	Calculation method

References	: Not available.
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Indicates information that has changed from previously issued version.

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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.