

SAFETY DATA SHEET

In accordance with the Standard for Classification and Labeling of Chemical Substance and Material Safety Data Sheet, Article 10 Paragraph 1

Section 1. Chemical product and company identification

Product identifier : High Solids Epoxy Primer 10P20-44
MSDS code : 002751
Other means of identification : Not available.
Product type : Liquid.

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

Not applicable.

Supplier's details : AkzoNobel Aerospace Coatings
Rijksstraatweg 31
2171 AJ Sassenheim
P.O. Box 3
2170 BA Sassenheim
The Netherlands
Akzo Nobel Coatings, Inc.
1 East Water Street
Waukegan, IL 60085
USA
Tel. 1 847 623 4200
Email: customer.service@akzonobel.com
Email: PSRA_SSH@akzonobel.com

Emergency telephone number : + 31 (0)71 308 6944
Hours of operation : 24 hours

Section 2. Hazards identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION (Unborn child) - Category 2
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1
AQUATIC HAZARD (ACUTE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 2
Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 1.7%
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 1.7%

GHS label elements

Hazard pictograms :



Signal word : Danger

Section 2. Hazards identification

Hazard statements : Highly flammable liquid and vapor.
 Harmful if swallowed.
 Causes serious eye irritation.
 Causes skin irritation.
 May cause an allergic skin reaction.
 May cause cancer.
 Suspected of damaging the unborn child.
 Causes damage to organs through prolonged or repeated exposure.
 Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Avoid release to the environment. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.

Response : Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical 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 attention.

Storage : Store in a well-ventilated place. Keep cool.

Disposal : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	CAS number	%
strontium chromate	7789-06-2	≥20 - <25
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	25068-38-6	≥10 - <20
heptan-2-one	110-43-0	≥10 - <15
crystalline silica, respirable powder	14808-60-7	≥10 - <20
4-methylpentan-2-one	108-10-1	≥5 - <10
Phenol, polymer with formaldehyde, glycidyl ether	28064-14-4	<10
titanium dioxide	13463-67-7	≥0.1 - <5
silicon dioxide	7631-86-9	<10
2,2-bis(acryloyloxymethyl)butyl acrylate	15625-89-5	<10
xylene	1330-20-7	≥1 - <5
xylene	1330-20-7	≥1 - <5
toluene	108-88-3	≥0.3 - <5
barium chromate	10294-40-3	≥0.1 - <5
ethylbenzene	100-41-4	≥0.1 - <5
Formaldehyde, solution	50-00-0	<0.1
1,4-dihydroxybenzene	123-31-9	<0.1
lead	7439-92-1	<0.1
Cadmium (Non-pyrophoric)	7440-43-9	<0.1

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 as hazardous to health or the environment 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. 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. If necessary, call a poison center or physician. 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** : Harmful if swallowed.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First aid measures

Ingestion : Adverse symptoms may include the following:
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

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.

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 dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

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. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

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. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. 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. Use spark-proof tools and explosion-proof equipment. 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. Avoid exposure during pregnancy. 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. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. 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 a segregated and approved area. 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. Eliminate all ignition sources. Separate from oxidizing materials. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
strontium chromate	Ministry of Labor (Republic of Korea, 8/2013).
heptan-2-one	TWA: 0.0005 mg/m ³ 8 hours. Ministry of Labor (Republic of Korea, 8/2013).
crystalline silica, respirable powder	TWA: 235 mg/m ³ 8 hours. TWA: 50 ppm 8 hours.
	Ministry of Labor (Republic of Korea, 8/2013).
4-methylpentan-2-one	TWA: 0.05 mg/m ³ 8 hours. Form: Respirable fraction
	Ministry of Labor (Republic of Korea, 8/2013).
	STEL: 300 mg/m ³ 15 minutes. STEL: 75 ppm 15 minutes.
	TWA: 205 mg/m ³ 8 hours. TWA: 50 ppm 8 hours.
titanium dioxide	Ministry of Labor (Republic of Korea, 8/2013).
	TWA: 10 mg/m ³ 8 hours. Form: total dust with less than 1% of free SiO ₂
xylene	Ministry of Labor (Republic of Korea, 8/2013).
	STEL: 655 mg/m ³ 15 minutes. STEL: 150 ppm 15 minutes.
	TWA: 435 mg/m ³ 8 hours. TWA: 100 ppm 8 hours.
xylene	Ministry of Labor (Republic of Korea, 8/2013).
	STEL: 655 mg/m ³ 15 minutes. STEL: 150 ppm 15 minutes.
	TWA: 435 mg/m ³ 8 hours. TWA: 100 ppm 8 hours.
toluene	Ministry of Labor (Republic of Korea, 8/2013).
	STEL: 560 mg/m ³ 15 minutes. STEL: 150 ppm 15 minutes.
	TWA: 188 mg/m ³ 8 hours. TWA: 50 ppm 8 hours.
barium chromate	Ministry of Labor (Republic of Korea, 8/2013).
	TWA: 0.01 mg/m ³ 8 hours.
ethylbenzene	Ministry of Labor (Republic of Korea, 8/2013).
	STEL: 545 mg/m ³ 15 minutes. STEL: 125 ppm 15 minutes.
	TWA: 435 mg/m ³ 8 hours. TWA: 100 ppm 8 hours.
Formaldehyde, solution	Ministry of Labor (Republic of Korea, 8/2013).
	STEL: 1.5 mg/m ³ 15 minutes. STEL: 1 ppm 15 minutes.

Section 8. Exposure controls/personal protection

1,4-dihydroxybenzene	TWA: 0.75 mg/m ³ 8 hours. TWA: 0.5 ppm 8 hours. Ministry of Labor (Republic of Korea, 8/2013).
lead	TWA: 2 mg/m ³ 8 hours. Ministry of Labor (Republic of Korea, 8/2013).
Cadmium (Non-pyrophoric)	TWA: 0.05 mg/m ³ , (as Pb) 8 hours. Ministry of Labor (Republic of Korea, 8/2013). TWA: 0.01 mg/m ³ , (as Cd) 8 hours. Form: Respirable dust TWA: 0.002 mg/m ³ , (as Cd) 8 hours. Form: Respirable fraction

Appropriate engineering controls : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

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. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

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

Appearance

Physical state : Liquid.

Color : Yellow.

Odor : Solvent.

Odor threshold : Not available.

pH : Neutral.

Melting point : Not available.

Boiling point : 117°C (242.6°F)

Flash point : Closed cup: 4°C (39.2°F)

Evaporation rate : Not available.

Flammability (solid, gas) : Not available.

Lower and upper explosive (flammable) limits : Greatest known range: Lower: 1.4% Upper: 7.5% (4-methylpentan-2-one)

Vapor pressure : Not available.

Vapor density : Highest known value: 3.7 (Air = 1) (xylene). Weighted average: 3.59 (Air = 1)

Relative density : 1.444

Solubility : Not available.

Partition coefficient: n-octanol/water : Not available.

Auto-ignition temperature : Not available.

Decomposition temperature : Not available.

Viscosity : Kinematic (room temperature): 2.01 cm²/s (201 cSt)

VOC content : 356 g/l [ISO 11890-2]

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 : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials:
oxidizing materials

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
strontium chromate	LD50 Oral	Rat	3118 mg/kg	-
heptan-2-one	LD50 Oral	Rat	1600 mg/kg	-
4-methylpentan-2-one	LD50 Oral	Rat	2080 mg/kg	-
2,2-bis(acryloyloxymethyl) butyl acrylate	LD50 Dermal	Rabbit	5170 mg/kg	-
xylene	LD50 Oral	Rat	4300 mg/kg	-
toluene	LD50 Oral	Rat	636 mg/kg	-
1,4-dihydroxybenzene	LD50 Oral	Rat	302 mg/kg	-
Cadmium (Non-pyrophoric)	LD50 Oral	Rat	2330 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	Eyes - Mild irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 microliters	-
	Skin - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
heptan-2-one	Skin - Mild irritant	Rabbit	-	24 hours 14 milligrams	-
4-methylpentan-2-one	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters	-
	Eyes - Severe irritant	Rabbit	-	40 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
2,2-bis(acryloyloxymethyl) butyl acrylate	Eyes - Moderate irritant	Rabbit	-	100 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
xylene	Eyes - Mild irritant	Rabbit	-	87 milligrams	-
	Eyes - Severe irritant	Rabbit	-	24 hours 5 milligrams	-
	Skin - Mild irritant	Rat	-	8 hours 60 microliters	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 milligrams	-
toluene	Skin - Moderate irritant	Rabbit	-	100 Percent	-
	Eyes - Mild irritant	Rabbit	-	0.5 minutes	-
				100 milligrams	-
	Eyes - Mild irritant	Rabbit	-	870 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	24 hours 2 milligrams	-
	Skin - Mild irritant	Pig	-	24 hours 250 microliters	-
	Skin - Mild irritant	Rabbit	-	435 milligrams	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 milligrams	-
	Skin - Moderate irritant	Rabbit	-	500 milligrams	-
	1,4-dihydroxybenzene	Skin - Mild irritant	Human	-	2 Percent

Section 11. Toxicological information

	Skin - Severe irritant	Human	-	5 Percent	-
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Sensitization

Not available.

CMR - ISHA Article 42 Public Notice No 2013-38 Occupational Exposure Limits

Product/ingredient name	CAS number	Classification
Strontium chromate	7789-06-2	Carc. 1A
Silica (Crystalline quartz)	14808-60-7	Carc. 1A
Hexone	108-10-1	Carc. 2
Titanium dioxide	13463-67-7	Carc. 2
Toluene	108-88-3	Repr. 2 F Repr. 2 D
Chromium(VI) compounds (Water insoluble inorganic compounds)	10294-40-3	Carc. 1A
Ethyl benzene	100-41-4	Carc. 2
Formaldehyde	50-00-0	Carc. 1A
Dihydroxybenzene	123-31-9	Muta. 2 Carc. 2
Lead and Inorganic compounds	7439-92-1	Carc. 1B Repr. 1A F Repr. 1A D
Cadmium and compounds	7440-43-9	Muta. 2 Carc. 1A Repr. 2 F Repr. 2 D

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH
Strontium chromate and mixtures which contain 0.1% or more	+	1	Known to be a human carcinogen.	A2
crystalline silica respirable	-	1	Known to be a human carcinogen.	A2
4-methylpentan-2-one	-	2B	-	A3
titanium dioxide	-	2B	-	A4
silicon dioxide	-	3	-	-
Xylene	-	3	-	A4
Xylene	-	3	-	A4
Toluene	-	3	-	A4
Chromic acid, salts and mixtures which contain 0.1% or more (Excluding the substances separately specified in this notice)	+	1	Known to be a human carcinogen.	A1
ethylbenzene	-	2B	-	A3
Formalin and mixtures which contain 1% or more as Formaldehyde	+	1	Known to be a human carcinogen.	A2
Hydroquinone and mixtures which contain 2.5% or more	-	3	-	A3
lead	+	2B	Reasonably anticipated to be a human carcinogen.	A3

Section 11. Toxicological information

cadmium (non-pyrophoric)	+	1	Known to be a human carcinogen.	A2
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Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
4-methylpentan-2-one	Category 3	Not applicable.	Respiratory tract irritation
xylene	Category 3	Not applicable.	Respiratory tract irritation
toluene	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
crystalline silica, respirable powder	Category 1	Not determined	Not determined
toluene	Category 2	Not determined	Not determined
Cadmium (Non-pyrophoric)	Category 1	Not determined	Not determined

Aspiration hazard

Name	Result
xylene	ASPIRATION HAZARD - Category 1
toluene	ASPIRATION HAZARD - Category 1

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** : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 11. Toxicological information

Ingestion : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations

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

Not available.

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.

Teratogenicity : Suspected of damaging the unborn child.

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

Route	ATE value
Oral	1893 mg/kg
Dermal	69557.1 mg/kg
Inhalation (vapors)	47.58 mg/l

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
heptan-2-one	Acute LC50 131000 to 137000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
4-methylpentan-2-one	Acute LC50 505000 to 514000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
xylene	Chronic NOEC 78 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 168 mg/l Fresh water	Fish - Pimephales promelas - Embryo	33 days
1,4-dihydroxybenzene	Acute LC50 8500 µg/l Marine water	Crustaceans - Palaemonetes pugio	48 hours
	Acute LC50 13400 µg/l Fresh water	Fish - Pimephales promelas	96 hours
Cadmium (Non-pyrophoric)	Acute LC50 162 µg/l Fresh water	Daphnia - Daphnia pulicaria	48 hours
	Acute LC50 44 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 97 µg/l Fresh water	Algae - Pseudokirchneriella	72 hours

Section 12. Ecological information

	Acute EC50 0.095 mg/l Marine water Acute EC50 200 µg/l Fresh water Acute EC50 13.5 µg/l Fresh water	subcapitata - Exponential growth phase Algae - Ulva pertusa Aquatic plants - Lemna minor Daphnia - Daphnia magna - Neonate	96 hours 4 days 48 hours
	Acute LC50 0.072 µg/l Marine water	Crustaceans - Amphipoda - Adult	48 hours
	Acute LC50 2 µg/l Fresh water Chronic NOEC 2 µg/l Fresh water	Fish - Cyprinus carpio Algae - Parachlorella kessleri - Exponential growth phase	96 hours 72 hours
	Chronic NOEC 0.02 µg/l Fresh water	Fish - Cyprinus carpio	4 weeks

Persistence and degradability

Not available.

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
reaction product: bisphenol-A-(epichlorhydrin); epoxy resin	2.64 to 3.78	31	low
heptan-2-one	2.26	-	low
4-methylpentan-2-one	1.9	-	low
2,2-bis(acryloyloxymethyl) butyl acrylate	0.67	-	low
xylene	3.12	8.1 to 25.9	low
toluene	2.73	90	low
1,4-dihydroxybenzene	0.59	3.162	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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 13. Disposal considerations

Disposal precautions : 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. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	UN	IMDG	IATA
UN number	UN1263	UN1263	UN1263
UN proper shipping name	PAINT	PAINT	PAINT
Transport hazard class(es)	3 	3  	3 
Packing group	II	II	II
Environmental hazards	No.	strontium chromate, Oxirane, 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis-, homopolymer	No.
Additional information	-	F-E, _S-E_ The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.	The environmentally hazardous substance mark may appear if required by other transportation regulations.

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.

Section 15. Regulatory information

Regulation according to ISHA

ISHA article 37 (Harmful substances prohibited from manufacture) : The following components are listed: Chromium(6+) compounds; Chromium(6+) compounds

ISHA article 38 (Harmful substances requiring permission) : None of the components are listed.

Article 2 of Youth Protection Act on Substances Hazardous to Youth : Not applicable.

Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:

Section 15. Regulatory information

strontium chromate
 heptan-2-one
 crystalline silica, respirable powder
 4-methylpentan-2-one
 titanium dioxide
 xylene
 xylene
 toluene
 barium chromate
 ethylbenzene
 Formaldehyde, solution
 1,4-dihydroxybenzene
 lead
 Cadmium (Non-pyrophoric)

- ISHA Enforcement Regs Annex 11-3 (Exposure standards established for harmful factors)** : The following components are listed: Hexavalent chromium compounds, water-soluble; Hexavalent chromium compounds insoluble; Lead and its inorganic compounds; Cadmium and its compounds; Formaldehyde
- ISHA Enforcement Regs Annex 11-4 (Harmful factors subject to Work Environment Measurement)** : The following components are listed: Water soluble Cr VI compounds; Methyl n-amyl ketone; Quartz; Silica; Methyl isobutyl ketone; Titanium dioxide; Xylene, o,m,p-isomers
- ISHA Enforcement Regs Annex 12-2 (Harmful Factors Subject to Special Health Check-up)** : The following components are listed: Chromium and compounds; Methyl n-amyl ketone; Methyl isobutyl ketone; Xylene
- Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control)** : The following components are listed: Chromium and its compounds (hexavalent chromium only); Chromium and its compounds (hexavalent chromium only); Methyl n-amyl ketone; Methyl isobutyl ketone; Titanium dioxide; Xylene
- Regulation according to Chemicals Control Act**
- K-Reach Article 20 (Toxic chemicals)** : Toxic
- K-Reach Article 27 (Prohibited)** : None of the components are listed.
- K-Reach Article 27 (Restricted)** : The following components are listed: Chromium(6+) compounds; Chromium(6+) compounds
- CSCA Article 11 (TRI)** : The following components are listed: Chromium and its compounds; Chromium and its compounds; 4,4'-(1-Methylethylidene) bisphenol polymer with (chloromethyl) oxirane; Xylene
- Korea inventory** : All components are listed or exempted.
- CSCA Article 39 (Accident Precaution Chemicals)** : None of the components are listed.
- Dangerous Materials Safety Management Act** : Class: Class 4 - Flammable Liquid
 Item: 2. Class 1 petroleums - Water-insoluble liquid
 Threshold: 200 L
 Danger category: II
 Signal word: Contact with sources of ignition prohibited
- Wastes regulation** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Section 15. Regulatory information

Montreal Protocol (Annexes A, B, C, E)

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

History

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Key to abbreviations : ATE = Acute Toxicity Estimate
 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)
 UN = United Nations

References : Not available.

✓ Indicates information that has changed from previously issued version.

Notice to reader

FOR PROFESSIONAL USE ONLY

IMPORTANT NOTE The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

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