

SAFETY DATA SHEET


LaserForm CoCrF75 (A)

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

Section 1. Chemical product and company identification

- A. Product name** : LaserForm CoCrF75 (A)
- B. Relevant identified uses of the substance or mixture and uses advised against**
Product use : For use with 3D Systems' Direct Metal Printing equipment.
- C. Manufacturer / Importer / Distributor** : 3D Systems, Inc.
333 Three D Systems Circle
Rock Hill, South Carolina, USA
- Phone: +1 803 326 3900 or
Toll-free Phone: +1 800 793 3669
- e-mail address of person responsible for this SDS** : moreinfo@3dsystems.com
- Emergency telephone number of the company** : + 1 703 527 3887 (Chemtrec, worldwide)

Section 2. Hazards identification

- A. Hazard classification** : ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
GERM CELL MUTAGENICITY - Category 2
CARCINOGENICITY - Category 1B
TOXIC TO REPRODUCTION - Category 1B
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1
- This product is classified in accordance with the Industrial Safety and Health Act and the Chemical Control Act.
- B. GHS label elements, including precautionary statements**
- Symbol** : 
- Signal word** : Danger
- Hazard statements** : H302 + H332 - Harmful if swallowed or if inhaled.
H317 - May cause an allergic skin reaction.
H319 - Causes serious eye irritation.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H341 - Suspected of causing genetic defects.
H350 - May cause cancer.
H360 - May damage fertility or the unborn child.
H410 - Very toxic to aquatic life with long lasting effects.
- Precautionary statements**

Section 2. Hazards identification

- Prevention** : P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P284 - Wear respiratory protection.
P273 - Avoid release to the environment.
P261 - Avoid breathing dust.
P270 - Do not eat, drink or smoke when using this product.
P264 - Wash hands thoroughly after handling.
- Response** : P391 - Collect spillage.
P308 + P313 - IF exposed or concerned: Get medical advice or attention.
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.
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.
- Storage** : Not applicable.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

C. Other hazards which do not result in classification

May form explosible dust-air mixture if dispersed.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	Common name	CAS number	%
cobalt	cobalt (non-respirable powder)	7440-48-4	≥50 - <75
chromium	chromium	7440-47-3	≥25 - <50
molybdenum	molybdenum	7439-98-7	<10
manganese	manganese	7439-96-5	<1
silicon	silicon	7440-21-3	<1
nickel powder	nickel	7440-02-0	<0.1

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

- A. 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.
- B. 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.

Section 4. First aid measures

- C. 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 the event of any complaints or symptoms, avoid further exposure.
- D. 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. 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.
- E. 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

- A. Extinguishing media**
- Suitable extinguishing media** : Use approved Class D extinguisher or smother with dry sand, dry clay or dry ground limestone. Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : CO₂, water, ABC powder and foam.
- B. Specific hazards arising from the chemical** : This material is very 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:
metal oxide/oxides
- C. 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.
- Special precautions 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.
- Remark (Explosibility)** : May form explosible dust-air mixture if dispersed.

Section 6. Accidental release measures

- A. Personal precautions, protective equipment and emergency procedures** : 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 dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- B. 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.
- C. Methods and materials for containment and cleaning up**
- Small spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Do not dry sweep. Use only vacuum cleaners equipped with a wet separator system and a grounding cable (ATEX, Hazardous locations certified / Suitable for use with Group E (IIIC) Conductive Dusts / Suitable for use in Class 2, Division II (Zone 22) locations or better). Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : 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. Avoid dust generation. Do not dry sweep. Use only vacuum cleaners equipped with a wet separator system and a grounding cable (ATEX, Hazardous locations certified / Suitable for use with Group E (IIIC) Conductive Dusts / Suitable for use in Class 2, Division II (Zone 22) locations or better). Avoid creating dusty conditions and prevent wind dispersal. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

- A. 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. 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 ingest. Avoid breathing dust. Avoid release to the environment. 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.
- 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.
- B. 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

A. Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
cobalt	Ministry of Employment and Labor (Republic of Korea, 1/2020). TWA: 0.02 mg/m ³ 8 hours.
chromium	Ministry of Employment and Labor (Republic of Korea, 1/2020). TWA: 0.5 mg/m ³ 8 hours.
molybdenum	ACGIH TLV (United States, 1/2021). TWA: 10 mg/m ³ , (as Mo) 8 hours. Form: Inhalable fraction TWA: 3 mg/m ³ , (as Mo) 8 hours. Form: Respirable fraction
manganese	Ministry of Employment and Labor (Republic of Korea, 1/2020). TWA: 1 mg/m ³ 8 hours. Form: Fume STEL: 3 mg/m ³ 15 minutes. Form: Fume TWA: 1 mg/m ³ , (as Mn) 8 hours.
silicon	Ministry of Employment and Labor (Republic of Korea, 1/2020). TWA: 10 mg/m ³ 8 hours.
nickel powder	Ministry of Employment and Labor (Republic of Korea, 1/2020). TWA: 1 mg/m ³ 8 hours.

B. 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.

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.

C. Personal protective equipment

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.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, 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. If operating conditions cause high dust concentrations to be produced, use dust goggles.

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.

Section 8. Exposure controls/personal protection

- 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.
For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Hygiene measures** : Do not blow dust off clothing or skin with compressed air. 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.

Section 9. Physical and chemical properties

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

A. Appearance

- Physical state** : Solid. [Powder. particle size: 100% <100 µm]
Color : Dark grey.

B. Odor : Odorless.

C. Odor threshold : Not applicable.

D. pH : Not applicable.

E. Melting/freezing point : 1315 to 1540°C (2399 to 2804°F)

F. Boiling point, initial boiling point, and boiling range : Not available.

G. Flash point : Not applicable.

Fire point : Not available.

H. Evaporation rate : Not available.

I. Flammability (solid, gas) : Non-flammable.

J. Lower and upper explosive (flammable) limits : Not applicable.

Explosive properties : May form explosive dust-air mixture if dispersed.

K. Vapor pressure : Not available.

L. Solubility : Not available.

Solubility in water : Insoluble.

M. Vapor density : Not applicable.

N. Relative density : Not available.

Density : 8.4 g/cm³

O. Partition coefficient: n-octanol/water : Not applicable.

P. Auto-ignition temperature : Not self-ignitable.

Q. Decomposition temperature : Not applicable.

R. Viscosity : Not applicable.

S. Molecular weight : Not applicable.

Particle characteristics

Median particle size : Not available.

Section 10. Stability and reactivity

- A. Chemical stability** : The product is stable.
Possibility of hazardous reactions : May form explosible dust-air mixture if dispersed.
- B. Conditions to avoid** : Keep away from heat, sparks and flame. Avoid dust generation. Avoid static electrical charge.
- C. Incompatible materials** : Reactive or incompatible with the following materials: alkalis, acids, oxidizing materials, halogenated hydrocarbons, combustible materials.
- D. Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

- A. Information on the likely routes of exposure** : Not available.

Potential acute health effects

- Inhalation** : Harmful if inhaled. Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs. May cause allergy or asthma symptoms or breathing difficulties if inhaled.
- Ingestion** : Harmful if swallowed.
- Skin contact** : May cause an allergic skin reaction.
- Eye contact** : Causes serious eye irritation.

Over-exposure signs/symptoms

- Inhalation** : Adverse symptoms may include the following:
 respiratory tract irritation
 coughing
 wheezing and breathing difficulties
 asthma
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations
- Ingestion** : 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
- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness

B. Health hazards

Acute toxicity

- Conclusion/Summary** : Harmful if swallowed or if inhaled.

Irritation/Corrosion

Conclusion/Summary

- Eyes** : Causes serious eye irritation.

Sensitization

Section 11. Toxicological information

Conclusion/Summary

Skin : May cause an allergic skin reaction.

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

CMR - ISHA Article 42 Occupational Exposure Limits

Product/ingredient name	CAS number	Classification
Cobalt and inorganic compounds	7440-48-4	CARCINOGENICITY - Category 2
Nickel	7440-02-0	CARCINOGENICITY - Category 2

Mutagenicity

Conclusion/Summary : Suspected of causing genetic defects.

Carcinogenicity

Product/ingredient name	Result	Species	Dose	Exposure	Remarks
nickel powder	Positive - Inhalation [OECD 451]	Rat - Male, Female	0.4 mg/m ³ NOAEL	24 months; 6 hours per day	-

Conclusion/Summary : May cause cancer.

Classification

Product/ingredient name	OSHA	IARC	NTP	ACGIH
cobalt	-	2B	Reasonably anticipated to be a human carcinogen.	A2
chromium	-	3	-	-
manganese	-	-	-	A4
nickel powder	-	2B	-	A5

Reproductive toxicity

Conclusion/Summary : May damage fertility.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
nickel powder	Category 1	-	-

Aspiration hazard

Not available.

Potential chronic health effects

Chronic toxicity

Product/ingredient name	Result	Species	Dose	Exposure	Remarks
nickel powder	Chronic LOAEL Inhalation Dusts and mists [OECD 451]	Rat - Male, Female	0.1 mg/m ³	24 months; 6 hours per day	-

Conclusion/Summary : Based on available data, the classification criteria are not met.

General : Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. 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 : Suspected of causing genetic defects.

Reproductive toxicity : May damage fertility or the unborn child.

Section 11. Toxicological information

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)
LaserForm CoCrF75 (A)	841.6	N/A	N/A	N/A	2.5
cobalt	500	N/A	N/A	N/A	1.5

Section 12. Ecological information

A. Ecotoxicity

Conclusion/Summary : Very toxic to aquatic life with long lasting effects.

B. Persistence and degradability

Conclusion/Summary : The methods for determining the biological degradability are not applicable to inorganic substances.

C. Bioaccumulative potential

Not available.

D. Mobility in soil

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

Mobility : Not available.

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

Section 13. Disposal considerations

A. 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.

B. 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. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Section 14. Transport information

	UN	IMDG	IATA
A. UN number	UN3077	UN3077	UN3077
B. UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cobalt)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (cobalt)	Environmentally hazardous substance, solid, n.o.s. (cobalt)
C. Transport hazard class(es)	9	9	9
Label			
D. Packing group	III	III	III
E. Environmental hazards	Yes.	Marine Pollutant: Yes	Yes.

Additional information

UN : 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.

Special provisions 274, 331, 335, 375

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, 966, 967, 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: 400 kg. Packaging instructions: 956. Cargo Aircraft Only: 400 kg. Packaging instructions: 956. Limited Quantities - Passenger Aircraft: 30 kg. Packaging instructions: Y956.

Special provisions A97, A158, A179, A197, A215

F. 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 applicable.

Section 15. Regulatory information

A. Regulation according to ISHA

ISHA article 117 (Harmful substances prohibited from manufacture) : None of the components are listed.

ISHA article 118 (Harmful substances requiring permission) : None of the components are listed.

Exposure Limits of Chemical Substances and Physical Factors

The following components have an OEL:

Section 15. Regulatory information

cobalt

chromium

molybdenum

manganese

silicon

nickel powder

ISHA Enforcement Regs Annex 19 (Exposure standards established for harmful factors) : The following components are listed: cobalt and its inorganic compounds, manganese and its inorganic compounds, Nickel and its insoluble inorganic compounds

ISHA Enforcement Regs Annex 21 (Harmful factors subject to Work Environment Measurement) : The following components are listed: cobalt and its inorganic compounds, chromium and its inorganic compounds

ISHA Enforcement Regs Annex 22 (Harmful Factors Subject to Special Health Check-up) : The following components are listed: Cobalt (dust, fume), Chromium and its compounds

Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control) : The following components are listed: cobalt and its inorganic compounds

B. Regulation according to Chemicals Control Act

CCA Article 11 (TRI) : The following components are listed: Cobalt and its compounds, Chromium and its compounds

Article 18 Prohibited (K-Reach Article 27) : None of the components are listed.

Article 19 Subject to authorization (K-Reach Article 25) : None of the components are listed.

Article 20 Toxic Chemicals (K-Reach Article 20) : Not applicable

Article 20 Restricted (K-Reach Article 27) : None of the components are listed.

CCA Article 39 (Accident Precaution Chemicals) : None of the components are listed.

C. Dangerous Materials Safety Management Act : **Class:** Class 2 - Combustible Solid
Item: 5. Metal powder
Threshold: 500 kg
Danger category: III

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

E. Other regulations in Korea and International regulations

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

Section 15. Regulatory information

Existing Chemical Substances Subject to Registration : 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	: All components are listed or exempted.
Canada	: All components are listed or exempted.
China	: All components are listed or exempted.
Europe	: All components are listed or exempted.
New Zealand	: All components are listed or exempted.
Philippines	: All components are listed or exempted.
Republic of Korea	: All components are listed or exempted.
Taiwan	: All components are listed or exempted.
Thailand	: All components are listed or exempted.
United States	: All components are active or exempted.
Viet Nam	: All components are listed or exempted.

Section 16. Other information

A. References : - Registry of Toxic Effects of Chemical Substances
- United States Environmental Protection Agency ECOTOX

B. Date of issue/Date of revision : 2021/12/09

Date of previous issue : 2021/08/04

C. Version : 2.1

Date of printing : **2021/12/09**

Other

Indicates information that has changed from previously issued version.

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)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Notice to reader

Section 16. Other information

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

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.

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