

SAFETY DATA SHEET

DUPLI-COLOR™ CHROME

Section 1. Identification

Chemical name : DUPLI-COLOR™ CHROME
Product code : CS101
Other means of identification : Not available.

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

Not applicable.

Producer, importer, or supplier's name, address and telephone number : The Sherwin-Williams Company
101 W. Prospect Avenue
Cleveland, OH 44115
(216) 566-2902
e-mail address of person responsible for this SDS : sds@sherwin.com
Emergency telephone number (with hours of operation) : 00801-14-8954
(Emergency contact available 24 hours a day)

Section 2. Hazards identification

Classification of the substance or mixture : AEROSOLS - Category 1
SKIN CORROSION/IRRITATION - Category 2
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
AQUATIC HAZARD (ACUTE) - Category 2
AQUATIC HAZARD (LONG-TERM) - Category 2
Percentage of the mixture consisting of ingredient(s) of unknown oral toxicity: 52.5%
Percentage of the mixture consisting of ingredient(s) of unknown dermal toxicity: 82%
Percentage of the mixture consisting of ingredient(s) of unknown inhalation toxicity: 66.4%
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 48.7%

GHS label elements

Hazard pictograms :



Signal word :

Danger

Hazard statements :

Extremely flammable aerosol.
Pressurized container: may burst if heated.
Causes serious eye irritation.
Causes skin irritation.
Suspected of causing cancer.
May be fatal if swallowed and enters airways.
May cause drowsiness or dizziness.
May cause damage to organs through prolonged or repeated exposure.

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SHW-A4-AP-GHS-TW

Section 2. Hazards identification

Toxic to aquatic life with long lasting effects.

Precautionary statements

- General** : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.
- 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. Do not spray on an open flame or other ignition source. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe dust or mist. Wash hands thoroughly after handling. Do not pierce or burn, even after use.
- Response** : Collect spillage. Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or physician if you feel unwell. IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation 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 locked up. Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.
- Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

Other hazards which do not result in classification : For more detailed information, please refer to the Safety Data Sheet.

Section 3. Composition/information on ingredients

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

| Chinese name (Traditional) | Concentration | CAS number | Type |
|------------------------------------|---------------|------------|----------|
| 環己烷 | ≥10 - ≤20 | 110-82-7 | [1], [2] |
| 苯乙烷 | ≥10 - ≤18 | 100-41-4 | [1], [2] |
| 丙烷 | ≥10 - ≤25 | 74-98-6 | [1], [2] |
| Butane | ≥10 - ≤25 | 106-97-8 | [1], [2] |
| Hydrocarbon Polymer | ≥10 - <20 | 63393-89-5 | [1] |
| 丙酮 | ≥10 - ≤25 | 67-64-1 | [1], [2] |
| 鉛粉 | ≤4.5 | 7429-90-5 | [1] |
| Med. Aliphatic Hydrocarbon Solvent | ≤3 | 64742-88-7 | [1], [2] |

| Product name | Concentration | CAS number | Type |
|------------------------------------|---------------|------------|----------|
| Cyclohexane | ≥10 - ≤20 | 110-82-7 | [1], [2] |
| Ethylbenzene | ≥10 - ≤18 | 100-41-4 | [1], [2] |
| Propane | ≥10 - ≤25 | 74-98-6 | [1], [2] |
| Butane | ≥10 - ≤25 | 106-97-8 | [1], [2] |
| Hydrocarbon Polymer | ≥10 - <20 | 63393-89-5 | [1] |
| Acetone | ≥10 - ≤25 | 67-64-1 | [1], [2] |
| Aluminum | ≤4.5 | 7429-90-5 | [1] |
| Med. Aliphatic Hydrocarbon Solvent | ≤3 | 64742-88-7 | [1], [2] |

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.

Type

Section 3. Composition/information on ingredients

- [1] Substance classified with a health or environmental hazard
 [2] Substance with a workplace exposure limit
 [3] Toxic chemical substance
 [4] Additional disclosure due to company policy

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 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.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. 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. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
- Inhalation** : Adverse symptoms may include the following:
 respiratory tract irritation
 coughing
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness

Section 4. First aid measures

- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

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.

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 : Extremely flammable aerosol. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Gas may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back, causing fire or explosion. Bursting aerosol containers may be propelled from a fire at high speed. 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
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 : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. In the case of aerosols being ruptured, care should be taken due to the rapid escape of the pressurized contents and propellant. If a large number of containers are ruptured, treat as a bulk material spillage according to the instructions in the clean-up section. 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

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). Pressurized container: protect from sunlight and do not expose to temperatures exceeding 50°C. Do not pierce or burn, even after use. 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 swallow. Avoid breathing gas. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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. Empty containers retain product residue and can be hazardous.
- 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 away 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. 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

Section 8. Exposure controls/personal protection

| Ingredient name | Exposure limits |
|--|--|
| Cyclohexane | <p>TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014). STEL: 375 ppm 15 minutes. STEL: 1287.5 mg/m³ 15 minutes. TWA: 300 ppm 8 hours. TWA: 1030 mg/m³ 8 hours.</p> |
| Ethylbenzene | <p>TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014). STEL: 125 ppm 15 minutes. STEL: 542.5 mg/m³ 15 minutes. TWA: 100 ppm 8 hours. TWA: 434 mg/m³ 8 hours.</p> |
| Propane | <p>TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014). STEL: 1000 ppm 15 minutes. STEL: 1800 mg/m³ 15 minutes. TWA: 1000 ppm 8 hours. TWA: 1800 mg/m³ 8 hours.</p> |
| Butane | <p>TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014). STEL: 1000 ppm 15 minutes. STEL: 2375 mg/m³ 15 minutes. TWA: 800 ppm 8 hours. TWA: 1900 mg/m³ 8 hours.</p> |
| Acetone | <p>TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014). STEL: 937.5 ppm 15 minutes. STEL: 2225 mg/m³ 15 minutes. TWA: 750 ppm 8 hours. TWA: 1780 mg/m³ 8 hours.</p> |
| Solvent naphtha (petroleum), medium aliph. | <p>TW Minstry of Labor, labor permissible workplace exposure standards, allowable concentration (Taiwan, 6/2014). STEL: 125 ppm 15 minutes. STEL: 500 mg/m³ 15 minutes. TWA: 100 ppm 8 hours. TWA: 400 mg/m³ 8 hours.</p> |

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.

Individual protection measures

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 8. Exposure controls/personal 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.
- 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.
- 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.
- 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. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : Not available.
- Odor threshold** : Not available.
- pH** : 7
- Melting point** : Not available.
- Boiling point** : Not available.
- Flash point** : Closed cup: -29°C (-20.2°F) [Pensky-Martens Closed Cup]
- Evaporation rate** : 6.1 (butyl acetate = 1)
- Flammability (solid, gas)** : Not available.
- Lower and upper explosive (flammable) limits** : Lower: 1%
Upper: 12.8%
- Vapor pressure** : 101.3 kPa (760 mm Hg) [at 20°C]
- Vapor density** : 1.55 [Air = 1]
- Relative density** : 0.73
- Solubility** : Not available.
- Partition coefficient: n-octanol/water** : Not available.
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : Kinematic (40°C (104°F)): <0.205 cm²/s (<20.5 cSt)
- Flow time (ISO 2431)** : Not available.

Aerosol product

Section 9. Physical and chemical properties

Type of aerosol : Spray
Heat of combustion : 31.327 kJ/g

Section 10. Stability and reactivity

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).

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 |
|-------------------------|-----------------------|---------|--------------------------|----------|
| Cyclohexane | LD50 Oral | Rat | 6240 mg/kg | - |
| Ethylbenzene | LD50 Dermal | Rabbit | >5000 mg/kg | - |
| | LD50 Oral | Rat | 3500 mg/kg | - |
| Butane | LC50 Inhalation Vapor | Rat | 658000 mg/m ³ | 4 hours |
| Acetone | LD50 Oral | Rat | 5800 mg/kg | - |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|-------------------------|--------------------------|---------|-------|--------------------------|-------------|
| Ethylbenzene | Eyes - Severe irritant | Rabbit | - | 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 15 milligrams | - |
| Acetone | Eyes - Mild irritant | Human | - | 186300 parts per million | - |
| | Eyes - Mild irritant | Rabbit | - | 10 microliters | - |
| | Eyes - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| | Eyes - Severe irritant | Rabbit | - | 20 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 395 milligrams | - |

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Section 11. Toxicological information

Not available.

Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|--|--------------------------|------------------------------------|--|
| Cyclohexane Coumarone-indene resins | Category 3 Category 3 | Not applicable. Not applicable. | Narcotic effects Respiratory tract irritation and Narcotic effects |
| Acetone | Category 3 | Not applicable. | Narcotic effects Narcotic effects |

Specific target organ toxicity (repeated exposure)

| Name | Category | Route of exposure | Target organs |
|--------------|------------|-------------------|----------------|
| Ethylbenzene | Category 2 | Not determined | Not determined |

Aspiration hazard

| Name | Result |
|--|--|
| Cyclohexane Ethylbenzene Propane Butane Solvent naphtha (petroleum), medium aliph. | ASPIRATION HAZARD - Category 2 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 |

Information on the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

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:
respiratory tract irritation
coughing
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

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

Short term exposure

Section 11. Toxicological information

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 : May cause damage to organs through prolonged or repeated exposure.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Teratogenicity : No known significant effects or critical hazards.

Developmental effects : No known significant effects or critical hazards.

Fertility effects : No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

| Route | ATE value |
|---------------------|--------------|
| Oral | 9695.9 mg/kg |
| Inhalation (vapors) | 21.57 mg/l |

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-----------------------------|-------------------------------------|---|----------|
| Cyclohexane Ethylbenzene | Acute LC50 4530 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Acute EC50 4600 µg/l Fresh water | Algae - Pseudokirchneriella subcapitata | 72 hours |
| | Acute EC50 3600 µg/l Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute EC50 6530 µg/l Fresh water | Crustaceans - Artemia sp. - Nauplii | 48 hours |
| Acetone | Acute EC50 2930 µg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 4200 µg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| | Acute EC50 7200000 µg/l Fresh water | Algae - Selenastrum sp. | 96 hours |
| | Acute LC50 6000000 µg/l Fresh water | Crustaceans - Gammarus pulex | 48 hours |
| | Acute LC50 6900 mg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 5600 ppm Fresh water | Fish - Poecilia reticulata | 96 hours |
| | Chronic NOEC 4.95 mg/l Marine water | Algae - Ulva pertusa | 96 hours |
| | Chronic NOEC 0.016 ml/L Fresh water | Crustaceans - Daphniidae | 21 days |
| Aluminum | Chronic NOEC 0.1 ml/L Fresh water | Daphnia - Daphnia magna - Neonate | 21 days |
| | Chronic NOEC 0.1 mg/l Fresh water | Fish - Fundulus heteroclitus | 4 weeks |
| | Acute LC50 38000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 120 µg/l Fresh water | Fish - Oncorhynchus mykiss - Embryo | 96 hours |
| | Chronic NOEC 9 mg/l Fresh water | Aquatic plants - Ceratophyllum demersum | 3 days |

Section 12. Ecological information

Persistence and degradability

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-------------------------|-------------------|------------|------------------|
| Ethylbenzene | - | - | Readily |
| Acetone | - | - | Readily |

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------|--------------------|-----|-----------|
| Cyclohexane | - | 167 | 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. Empty containers or liners may retain some product residues. Do not puncture or incinerate container.

Section 14. Transport information

| | UN | IMDG | IATA |
|--|--|--|--|
| UN number | UN1950 | UN1950 | UN1950 |
| UN proper shipping name | AEROSOLS | AEROSOLS | AEROSOLS, flammable |
| Transport hazard class(es) | 2.1  | 2.1  | 2.1  |
| Packing group | - | - | - |
| Environmental hazards/Marine pollutant | No. | No. | No. |

Additional information

IMDG : **Emergency schedules** F-D, S-U

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 14. Transport information

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

TCSCA List of toxic chemicals

| Listed no. | Series no. | Product name | RQ | Class |
|------------|------------|--------------|----|-------|
| 82 | 1 | Cyclohexane | - | 4 |

List of chemicals for which manufacturing or handling is defined as "work specially hazardous to health" : This product contains substances "Specially hazardous to health": Acetone, Med. Aliphatic Hydrocarbon Solvent, Toluene.

List of chemicals reputed to be a "threat of imminent danger" : This product contains substances considered to be a "Threat of imminent danger": Cyclohexane, Ethylbenzene, Butane, Acetone, Med. Aliphatic Hydrocarbon Solvent, Amorphous Silica, Toluene, Benzene, Formaldehyde (max.).

OSHA Article 29 : None of the components are listed.

OSHA Article 30 : None of the components are 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 | : Not determined. |
| Japan | : Japan inventory (ENCS) : Not determined. Japan inventory (ISHL) : Not determined. |
| Malaysia | : 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 | : Not determined. |
| Turkey | : Not determined. |
| United States | : All components are listed or exempted. |
| Viet Nam | : Not determined. |

Section 16. Other information

Procedure used to derive the classification

| Classification | Justification |
|--|-----------------------|
| AEROSOLS - Category 1 | On basis of test data |
| SKIN CORROSION/IRRITATION - Category 2 | Calculation method |
| SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A | Calculation method |
| CARCINOGENICITY - Category 2 | Calculation method |
| SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 | Calculation method |
| SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 | Calculation method |
| ASPIRATION HAZARD - Category 1 | Calculation method |
| AQUATIC HAZARD (ACUTE) - Category 2 | Calculation method |
| AQUATIC HAZARD (LONG-TERM) - Category 2 | Calculation method |

References : Not available.

Section 16. Other information

Person who prepared the MSDS : 郑天和, Domy Zheng
Asia Regulatory Affairs/Product Stewardship Director
9F No.288, Jiang Chang San Road, Jingan District, Shanghai, China

History

Date of printing : 10/26/2018
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
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

✔ Indicates information that has changed from previously issued version.

Notice to reader

It is recommended that each customer or recipient of this Safety Data Sheet (SDS) study it carefully and consult resources, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. This information is provided in good faith and believed to be accurate as of the effective date herein. However, no warranty, express or implied, is given. The information presented here applies only to the product as shipped. The addition of any material can change the composition, hazards and risks of the product. Products shall not be repackaged, modified, or tinted except as specifically instructed by the manufacturer, including but not limited to the incorporation of products not specified by the manufacturer, or the use or addition of products in proportions not specified by the manufacturer. Regulatory requirements are subject to change and may differ between various locations and jurisdictions. The customer/buyer/user is responsible to ensure that his activities comply with all country, federal, state, provincial or local laws. The conditions for use of the product are not under the control of the manufacturer; the customer/buyer/user is responsible to determine the conditions necessary for the safe use of this product. The customer/buyer/user should not use the product for any purpose other than the purpose shown in the applicable section of this SDS without first referring to the supplier and obtaining written handling instructions. Due to the proliferation of sources for information such as manufacturer-specific SDS, the manufacturer cannot be responsible for SDSs obtained from any other source.