

Safety Data Sheet

AROMATIC URETHANE ROOF COATING 512-CA DARK GRAY



Conforms to ANSI Z400.1-2010 Standard - HCS 2012

| Protective Clothing | General Hazard | DOT |
|---------------------|----------------|-----|
| | | |

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name : AROMATIC URETHANE 512-CA
DARK GRAY
Product identity : 512-CA
Product type : polyurethane paint

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

Field of application : buildings and metal industry.
Identified uses : Industrial/Professional use
TSCA : Unless otherwise stated. All components are listed or exempted.

1.3 Details of the supplier of the safety data sheet

Company details : American WeatherStar
8095 Padgett Switch Rd.
Irvington, AL 36544
Phone number: 800-771-6643
www.americanweatherstar.com

1.4 Emergency telephone number (with hours of operation)

Emergency
24 hour Emergency Telephone No. INFOTRAC – (800) 535-5053
Customer Service: American WeatherStar, LLC. 800-771-6643

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

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

GHS Classification : FLAMMABLE LIQUIDS - Category 2
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

2.2 Label elements

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SECTION 2: Hazards identification

Hazard pictograms :



Signal word :

Danger

Hazard statements :

H225 - Highly flammable liquid and vapor.
H302 + H332 - Harmful if swallowed or if inhaled.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H334 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335 - May cause respiratory irritation.
H350 - May cause cancer.
H372 - Causes damage to organs through prolonged or repeated exposure. (lungs)

Precautionary statements :

Prevention :

Obtain special instructions before use. Wear protective gloves. Wear protective clothing. Wear eye or face protection. Wear respiratory protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating or lighting equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe vapor. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response :

Immediately call a POISON CENTER or doctor. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Take off contaminated clothing and wash it before reuse. Wash contaminated clothing before reuse. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage :

Store in a well-ventilated place. Keep container tightly closed. Keep cool.

Disposal :

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

Supplemental label elements :

None known.

2.3 Other hazards

Hazards not otherwise classified : None known.

SECTION 3: Composition/information on ingredients

Product definition :

Mixture

Physical state :

Liquid.

| Product/ingredient name | Identifiers | % | GHS Classification |
|--|-------------|-----------|--|
| Poly[oxy(methyl-1,2-ethanediyl)], α-hydro-ω-hydroxy-, polymer with 1,3-diisocyanatomethylbenzene | 9057-91-4 | ≥25 - ≤50 | ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 |
| aluminium hydroxide | 21645-51-2 | ≥25 - ≤50 | Not classified. |
| 4-chloro-trifluorotoluene | 98-56-6 | ≥10 - ≤25 | FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 |
| 1,6-hexanediyl-bis(2-(2-(1-ethylpentyl)-3-oxazolidinyl)ethyl)carbamate | 140921-24-0 | ≥5 - ≤10 | SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 |
| 2-ethylhexyl diphenyl phosphate | 1241-94-7 | ≥3 - ≤5 | Not classified. |
| acetone | 67-64-1 | ≥3 - ≤5 | FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |

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SECTION 3: Composition/information on ingredients

| | | | |
|---------------------------------------|------------|---------|--|
| quartz (chrystalline, non respirable) | 14808-60-7 | ≥1 - ≤3 | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 |
| titanium dioxide | 13463-67-7 | ≥1 - ≤3 | Not classified. |
| respirable quartz | 14808-60-7 | ≥1 - ≤3 | CARCINOGENICITY - Category 1A |
| | | | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 |
| m-tolylidene diisocyanate | 26471-62-5 | <1 | ACUTE TOXICITY (inhalation) - Category 1 |
| | | | SKIN IRRITATION - Category 2 |
| | | | EYE IRRITATION - Category 2A |
| | | | RESPIRATORY SENSITIZATION - Category 1 |
| | | | SKIN SENSITIZATION - Category 1 |
| | | | CARCINOGENICITY - Category 2 |
| | | | SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 |

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

There are no 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.

SECTION 4: First aid measures

4.1 Description of first aid measures

| | |
|------------------------------|---|
| General : | In all cases of doubt, or when symptoms persist, seek medical attention. Never give anything by mouth to an unconscious person. If breathing is irregular, drowsiness, loss of consciousness or cramps: Call 911 and give immediate treatment (first aid). |
| Eye contact : | Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. In all cases of doubt, or when symptoms persist, seek medical attention. |
| Inhalation : | Remove to fresh air. Keep person warm and at rest. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Give nothing by mouth. If unconscious, place in recovery position and get medical attention immediately. |
| Skin contact : | Remove contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Do NOT use solvents or thinners. |
| Ingestion : | If swallowed, seek medical advice immediately and show this container or label. Keep person warm and at rest. Do not induce vomiting unless directed to do so by medical personnel. Lower the head so that vomit will not re-enter the mouth and throat. |
| 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. |

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

| | |
|----------------|--|
| Eye contact : | Causes serious eye damage. |
| Inhalation : | Harmful if inhaled. May cause respiratory irritation. May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin contact : | Causes skin irritation. May cause an allergic skin reaction. |
| Ingestion : | Harmful if swallowed. |

Over-exposure signs/symptoms

| | |
|---------------|--|
| Eye contact : | Adverse symptoms may include the following: pain watering redness |
| Inhalation : | Adverse symptoms may include the following: respiratory tract irritation coughing wheezing and breathing difficulties asthma |

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SECTION 4: First aid measures

| | |
|----------------|--|
| Skin contact : | Adverse symptoms may include the following: pain or irritation redness blistering may occur |
| Ingestion : | Adverse symptoms may include the following: stomach pains |

4.3 Indication of any immediate medical attention and special treatment needed

| | |
|-----------------------|--|
| Notes to physician : | If gasses have been inhaled, from the decomposition of the product, symptoms may be delayed. |
| Specific treatments : | No specific treatment. |

SECTION 5: Firefighting measures

5.1 Extinguishing media

| | |
|-----------------------|---|
| Extinguishing media : | Recommended: alcohol resistant foam, CO ₂ , powders, water spray. Not to be used: waterjet. |
|-----------------------|---|

5.2 Special hazards arising from the substance or mixture

| | |
|---|--|
| Hazards from the substance or mixture : | Highly flammable liquid and vapor. 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. This material is harmful 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 combustion products : | Decomposition products may include the following materials: carbon oxides nitrogen oxides phosphorus oxides halogenated compounds carbonyl halides metal oxide/oxides |

5.3 Advice for firefighters

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. Fire will produce dense black smoke. Exposure to decomposition products may cause a health hazard. Cool closed containers exposed to fire with water. Do not release runoff from fire to drains or watercourses. 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

6.1 Personal precautions, protective equipment and emergency procedures

Avoid all direct contact with the spilled material. Exclude sources of ignition and be aware of explosion hazard. Ventilate the area. Avoid breathing vapor or mist. Refer to protective measures listed in sections 7 and 8. No action shall be taken involving any personal risk or without suitable training. If the product contaminates lakes, rivers, or sewers, inform the appropriate authorities in accordance with local regulations.

6.2 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.

6.3 Methods and materials for containment and cleaning up

Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Use spark-proof tools and explosion-proof equipment. Contaminated absorbent material may pose the same hazard as the spilled product.

6.4 Reference to other sections

See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

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SECTION 7: Handling and storage

7.1 Precautions for safe handling

Vapors are heavier than air and may spread along floors. Vapors may form explosive mixtures with air. Prevent the creation of flammable or explosive concentrations of vapors in air and avoid vapor concentrations higher than the occupational exposure limits. In addition, the product should be used only in areas from which all naked lights and other sources of ignition have been excluded. Electrical equipment should be protected to the appropriate standard. To dissipate static electricity during transfer, ground drum and connect to receiving container with bonding strap. No sparking tools should be used. Contains isocyanates. Exposure to isocyanate may result in acute irritation and/or sensitisation when breathing.

Care should be taken when re-opening partly-used containers.

Avoid inhalation of vapour, dust and spray mist. Avoid contact with skin and eyes. Eating, drinking and smoking should be prohibited in area where this material is handled, stored and processed. Appropriate personal protective equipment: see Section 8. Always keep in containers made from the same material as the original one.

7.2 Conditions for safe storage, including any incompatibilities

Store in accordance with local regulations for flammable liquids. Store in a cool, well-ventilated area away from incompatible materials and ignition sources. Keep out of the reach of children. Keep away from: Oxidizing agents, strong alkalis, strong acids as well as of amines, alcohols and water. No smoking. Prevent unauthorized access. Containers that are opened must be carefully resealed and kept upright to prevent leakage.

7.3 Specific end use(s)

See separate Product Data Sheet for recommendations or industrial sector specific solutions.

This product may be applied using several application techniques and methods of handling may be different for each. Application techniques include [but are not limited to] brushing, rolling, and spray application [conventional, HPLV, airless, pleural component or aerosol can]. Avoid the breathing of vapors and, if spraying, do not breath spray mist or aerosols.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

| Product/ingredient name | Exposure limit values |
|---------------------------------------|---|
| aluminium hydroxide | ACGIH TLV (United States, 3/2019). TWA: 1 mg/m ³ 8 hours. Form: Respirable fraction |
| acetone | ACGIH TLV (United States, 3/2019). TWA: 250 ppm 8 hours. STEL: 500 ppm 15 minutes. NIOSH REL (United States, 10/2016). TWA: 250 ppm 10 hours. TWA: 590 mg/m ³ 10 hours. OSHA PEL (United States, 5/2018). TWA: 1000 ppm 8 hours. TWA: 2400 mg/m ³ 8 hours. |
| quartz (chrySTALLINE, non respirable) | OSHA PEL Z3 (United States, 6/2016). TWA: 250 mppcf / (%SiO ₂ +5) 8 hours. Form: Respirable TWA: 10 mg/m ³ / (%SiO ₂ +2) 8 hours. Form: Respirable OSHA PEL (United States, 5/2018). TWA: 50 µg/m ³ 8 hours. Form: Respirable dust ACGIH TLV (United States, 3/2019). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m ³ 10 hours. Form: respirable dust |
| titanium dioxide | OSHA PEL (United States, 5/2018). TWA: 15 mg/m ³ 8 hours. Form: Total dust ACGIH TLV (United States, 3/2019). TWA: 10 mg/m ³ 8 hours. |
| respirable quartz | OSHA PEL Z3 (United States, 6/2016). TWA: 250 mppcf / (%SiO ₂ +5) 8 hours. Form: Respirable TWA: 10 mg/m ³ / (%SiO ₂ +2) 8 hours. Form: Respirable OSHA PEL (United States, 5/2018). TWA: 50 µg/m ³ 8 hours. Form: Respirable dust ACGIH TLV (United States, 3/2019). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 10/2016). TWA: 0.05 mg/m ³ 10 hours. Form: respirable dust |

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SECTION 8: Exposure controls/personal protection

Recommended monitoring procedures

If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

8.2 Exposure controls

Appropriate engineering controls

Provide local exhaust and general ventilation systems to maintain airborne concentrations below OSHA, ACGIH, and manufacturer recommended exposure limits. Local exhaust ventilation is preferred because it prevents contaminant dispersion into work areas by controlling it at its source. Use local and general exhaust ventilation to effectively remove and prevent buildup of mists/vapors/fumes generated from the handling of this product.

Note: Local exhaust ventilation is designed to capture an emitted contaminant at or near its source, before the contaminant has a chance to disperse into the workplace air. General exhaust ventilation, also called dilution ventilation, is different from local exhaust ventilation because instead of capturing emissions at their source and removing them from the air, general exhaust ventilation allows the contaminant to be emitted into the workplace air and then dilutes the concentration of the contaminant to an acceptable level (e.g., to the PEL or below).

Individual protection measures

- General : Gloves must be worn for all work that may result in soiling. Apron/coveralls/protective clothing must be worn when soiling is so great that regular work clothes do not adequately protect skin against contact with the product. Safety eyewear should be used when there is a likelihood of exposure.
- Hygiene measures : Wash hands, forearms, and face thoroughly after handling compounds and before eating, smoking, using lavatory, and at the end of day.
- 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Hand protection : Wear chemical-resistant gloves in combination with 'basic' employee training. The quality of the chemical-resistant protective gloves must be chosen as a function of the specific workplace concentrations and quantity of hazardous substances.
- Since the actual work situation is unknown. Supplier of gloves should be contacted in order to find the appropriate type. Below listed glove(s) should be regarded as generic advice:
- Recommended: Silver Shield / Barrier / 4H gloves, butyl rubber
Short term exposure: natural rubber (latex)
May be used: nitrile rubber, neoprene rubber, polyvinyl alcohol (PVA), polyvinyl chloride (PVC), Viton®
- Body protection : Personal protective equipment for the body should be selected based on the task being performed and the risks involved handling this product.
- Wear suitable protective clothing. Always wear protective clothing when spraying.
- Respiratory protection : If working areas have insufficient ventilation, wear half or totally covering mask equipped with gas filter of type Organic Vapor, when grinding use particle filter of type P95, P99 or P100. When spraying use a combined filter (organic vapor / HEPA or organic vapor / P100 type). Be sure to use approved/certified respirator or equivalent. Always wear an air-fed respirator when spraying in a continuous and prolonged work situation (e.g. hood with supply of fresh or compressed air or a full face, powered air purifying filter).
- This product contains low-boiling point liquids. Any respiratory protective equipment should be air-fed or organic vapor filter (Type AX).**
- Protective clothing (pictograms) :



Note: Application of paint products by spraying requires additional safety precautions: Full body suit, Full face respirator with air supplied.

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.

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

| | |
|--|--|
| Physical state : | Liquid. |
| Color : | Dark Gray |
| Odor : | Solvent-like |
| pH : | Testing not relevant or not possible due to nature of the product. |
| Melting point/freezing point : | Testing not relevant or not possible due to nature of the product. |
| Boiling point/boiling range : | Testing not relevant or not possible due to nature of the product. |
| Flash point : | Closed cup: 17°C (62.6°F) |
| Evaporation rate : | Testing not relevant or not possible due to nature of the product. |
| Flammability : | Highly flammable in the presence of the following materials or conditions: open flames, sparks and static discharge and heat. Flammable in the presence of the following materials or conditions: oxidizing materials and reducing materials. |
| Upper/lower flammability or explosive limits : | 0.9 - 13 vol % |
| Vapor pressure : | 0.009 kPa This is based on data for the following ingredient: Poly[oxy(methyl-1,2-ethanediyl)], α -hydro- ω -hydroxy-, polymer with 1,3-diisocyanatomethylbenzene |
| Vapor density : | Testing not relevant or not possible due to nature of the product. |
| Relative density : | 1.352 g/cm ³ |
| Solubility(ies) : | Easily soluble in the following materials: cold water and hot water. |
| Partition coefficient (LogKow) : | Testing not relevant or not possible due to nature of the product. |
| Auto-ignition temperature : | Testing not relevant or not possible due to nature of the product. |
| Decomposition temperature : | Testing not relevant or not possible due to nature of the product. |
| Viscosity : | Testing not relevant or not possible due to nature of the product. |
| Explosive properties : | Explosive in the presence of the following materials or conditions: oxidizing materials and reducing materials. |
| Oxidizing properties : | Testing not relevant or not possible due to nature of the product. |

9.2 Other information

| | |
|---|---|
| Solvent(s) % by weight (Included exempt solvent(s)): | 18 % (w/w) |
| Water % by weight : | Weighted average: 0 % |
| VOC content (Coatings) : | 0.236 lbs/gal (28.3 g/l) |
| VOC content (Regulatory) : | 0.289 lbs/gal (34.7 g/l) |
| TOC Content (Volatile) : | Weighted average: 127 g/l |
| Solvent Gas : | Weighted average: 0.047 m ³ /l |

SECTION 10: Stability and reactivity

10.1 Reactivity

No specific test data related to reactivity available for this product or its ingredients.

10.2 Chemical stability

The product is stable.

10.3 Possibility of hazardous reactions

Under normal conditions of storage and use, hazardous reactions will not occur.

10.4 Conditions to avoid

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SECTION 10: Stability and reactivity

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.

10.5 Incompatible materials

Extremely reactive or incompatible with the following materials: alkalis.
Highly reactive or incompatible with the following materials: oxidizing materials and acids.
Reactive or incompatible with the following materials: reducing materials.

10.6 Hazardous decomposition products

When exposed to high temperatures (i.e. in case of fire) harmful decomposition products may be formed:

Decomposition products may include the following materials: carbon oxides nitrogen oxides phosphorus oxides halogenated compounds carbonyl halides metal oxide/oxides

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Exposure to component solvent vapor concentrations may result in adverse health effects such as mucous membrane and respiratory system irritation and adverse effects on the kidneys, liver and central nervous system. Solvents may cause some of the above effects by absorption through the skin. Symptoms and signs include headaches, dizziness, fatigue, muscular weakness, drowsiness and, in extreme cases, loss of consciousness. Repeated or prolonged contact with the preparation may cause removal of natural fat from the skin, resulting in non-allergic contact dermatitis and absorption through the skin. If splashed in the eyes, the liquid may cause irritation and reversible damage. Accidental swallowing may cause stomach pain. Chemical lung inflammation may occur if the product is taken into the lungs via vomiting.

Isocyanate containing products have characteristics that include producing acute irritation and/or sensitisation when breathing, subsequent asthmatic problems and lung contractions. Sensitised people can, as a result from this, show asthmatic symptoms with exposure to atmospheric concentrations far below the TLV. Repeated exposures will lead to permanent damage to the respiratory system.

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|---------------------------------|---------------------------------|---------|-------------|----------|
| aluminium hydroxide | LD50 Oral | Rat | >5000 mg/kg | - |
| 4-chloro-trifluorotoluene | LC50 Inhalation Vapor | Rat | 33 mg/l | 4 hours |
| | LD50 Dermal | Rat | >3300 mg/kg | - |
| | LD50 Oral | Rat | 13000 mg/kg | - |
| 2-ethylhexyl diphenyl phosphate | LD50 Dermal | Rabbit | 7940 mg/kg | - |
| | LD50 Oral | Rat | 15800 mg/kg | - |
| acetone | LD50 Oral | Rat | 5800 mg/kg | - |
| titanium dioxide | LC50 Inhalation Dusts and mists | Rat | >6.8 mg/l | 4 hours |
| | LD50 Dermal | Rabbit | >5000 mg/kg | - |
| | LD50 Oral | Rat | >5000 mg/kg | - |
| m-tolylidene diisocyanate | LC50 Inhalation Vapor | Rat | 0.47 mg/l | 1 hours |
| | LD50 Dermal | Rabbit | >9400 mg/kg | - |
| | LD50 Oral | Rat | 4130 mg/kg | - |

Acute toxicity estimates

| Route | ATE value |
|------------------------------|---------------|
| Oral | 1479.84 mg/kg |
| Dermal | 3255.64 mg/kg |
| Inhalation (dusts and mists) | 4.44 mg/l |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure |
|---------------------------|--------------------------|---------|-------|--------------------------------------|
| 4-chloro-trifluorotoluene | Skin - Irritant | Rabbit | - | - |
| | Eyes - Irritant | Rabbit | - | - |
| acetone | Eyes - Mild irritant | Human | - | 186300 parts per million |
| | Eyes - Moderate irritant | Rabbit | - | 24 hours 20 milligrams |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams |
| titanium dioxide | Skin - Mild irritant | Human | - | 72 hours 300 Micrograms Intermittent |
| m-tolylidene diisocyanate | Skin - Severe irritant | Rabbit | - | 500 milligrams |

Sensitizer

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SECTION 11: Toxicological information

| Product/ingredient name | Route of exposure | Species | Result |
|---------------------------|-------------------|---------|-------------|
| 4-chloro-trifluorotoluene | skin | Mouse | Sensitizing |

Carcinogen Classification

| Product/ingredient name | IARC | NTP | OSHA |
|---------------------------------------|------|--|------|
| quartz (chrySTALLINE, non respirable) | 1 | Known to be a human carcinogen. | - |
| titanium dioxide | 2B | - | - |
| respirable quartz | 1 | Known to be a human carcinogen. | - |
| m-tolylidene diisocyanate | 2B | Reasonably anticipated to be a human carcinogen. | - |

Specific target organ toxicity (single exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|--|------------|-------------------|------------------------------|
| Poly[oxy(methyl-1,2-ethanediyl)], α-hydro-ω-hydroxy-, polymer with 1,3-diisocyanatomethylbenzene | Category 3 | | Respiratory tract irritation |
| 4-chloro-trifluorotoluene | Category 3 | | Respiratory tract irritation |
| acetone | Category 3 | | Narcotic effects |
| m-tolylidene diisocyanate | Category 3 | | Respiratory tract irritation |

Specific target organ toxicity (repeated exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|---------------------------------------|------------|-------------------|---------------|
| quartz (chrySTALLINE, non respirable) | Category 1 | inhalation | lungs |
| respirable quartz | Category 1 | inhalation | lungs |

Information on the likely routes of exposure

Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential chronic health effects

Sensitization : Contains m-tolylidene diisocyanate. May produce an allergic reaction.

Other information : No additional known significant effects or critical hazards.

SECTION 12: Ecological information

12.1 Toxicity

Do not allow to enter drains or watercourses. Harmful to aquatic life with long lasting effects.

When spilled, this product may act as an oil, causing a film, sheen, emulsion, or sludge at or beneath the surface of a body of water. Oils of any kind can cause: (a) drowning of waterfowl due to lack of buoyancy, loss of insulating capacity of feathers, starvation and vulnerability to predators due to lack of mobility; (b) lethal effect on fish by coating gill surfaces, preventing respiration; (c) potential fish kills resulting from alteration in biochemical oxygen demand; (d) asphyxiation of benthic life forms when floating masses become engaged with surface debris and settle on the bottom; and (e) adverse aesthetic effects of fouled shoreline and beaches.

| Product/ingredient name | Result | Species | Exposure |
|---------------------------------|-------------------------------------|-----------------------------------|----------|
| 4-chloro-trifluorotoluene | Acute IC50 2 mg/l | Daphnia | 48 hours |
| | Acute LC50 3 mg/l | Fish | 96 hours |
| 2-ethylhexyl diphenyl phosphate | Acute LC50 0.12 mg/l | Algae | 72 hours |
| | Acute LC50 150 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 15 mg/l | Fish | 96 hours |
| acetone | Chronic NOEC 0.018 mg/l Fresh water | Daphnia - Daphnia magna | 21 days |
| | 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 |
| titanium dioxide | Chronic NOEC 0.1 ml/L Fresh water | Daphnia - Daphnia magna - Neonate | 21 days |
| | Acute LC50 >100 mg/l | Daphnia | 48 hours |
| | Acute LC50 >100 mg/l | Fish | 96 hours |
| m-tolylidene diisocyanate | Acute EC50 4300 mg/l | Algae | 96 hours |
| | Acute EC50 12.5 mg/l | Daphnia | 48 hours |
| | Acute LC50 133 mg/l | Fish | 96 hours |

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SECTION 12: Ecological information

12.2 Persistence and degradability

| Product/ingredient name | Test | Result | Dose | Inoculum |
|---------------------------|--|--------------------------------|------|----------|
| 4-chloro-trifluorotoluene | OECD 301D 301D Ready Biodegradability - Closed Bottle Test | 19.2 % - Not readily - 28 days | - | - |

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|---------------------------|-------------------|------------|------------------|
| 4-chloro-trifluorotoluene | - | - | Not readily |

12.3 Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|---------------------------------|--------------------|-----|-----------|
| 4-chloro-trifluorotoluene | 3.7 | - | low |
| 2-ethylhexyl diphenyl phosphate | 5.61 | 934 | high |
| acetone | -0.23 | - | low |
| m-tolylidene diisocyanate | 3.43 | - | low |

12.4 Mobility in soil

Soil/water partition coefficient (K_{oc}) : No known data available in our database.

Mobility : No known data available in our database.

12.5 Other adverse effects

No known significant effects or critical hazards.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

The information presented below only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations.

Refer to Section 7 and Section 8 for additional handling information and protection of employees.

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.

United States - RCRA Toxic hazardous waste "U" List

| Ingredient | CAS # | Status | Reference number |
|------------------------------|---------|--------|------------------|
| Acetone (I); 2-Propanone (I) | 67-64-1 | Listed | U002 |






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SECTION 14: Transport information

Transport may take place according to national regulation or DOT for transport by road and by train, IMDG for transport by sea, IATA for Air shipment. Refer to specific Dangerous Goods Transport requirements under 49CFR, ICAO and IATA.

| 14.1 UN no. | 14.2 Proper shipping name | 14.3 Transport hazard class(es) | 14.4 PG* | 14.5 Env* | Additional information |
|------------------|------------------------------|--|-------------|--------------|---|
| DOT Code | UN1263 PAINT | 3 -  | II | No. | Reportable quantity (m-tolylidene diisocyanate) 27968.9 lbs / 12697.9 kg [2481.1 gal / 9391.9 L] Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements. |
| TDG Code | UN1263 PAINT | 3 -  | II | No. | Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.18-2.19 (Class 3). |
| SCT Code | UN1263 PAINT | 3 -  | II | No. | - |
| IMDG Code | UN1263 PAINT | 3 -  | II | No. | Emergency schedules F-E, S-E |
| IATA Code | UN1263 PAINT | 3 -  | II | No. | - |

Code : Classification
PG* : Packing group
Env.* : Environmental hazards

14.6 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.

14.7 Transport in bulk according to IMO instruments

Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

U.S. Federal regulations : All components are active or exempted.

TSCA 4(a) final test rules: 4-chloro-trifluorotoluene; nonane

TSCA 8(a) PAIR: 4-chloro-trifluorotoluene; silica/polydimethylsiloxane reactionproduct; methyl formate; nonane

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

United States inventory (TSCA 8b): All components are active or exempted.

TSCA 8(c) calls for record of SAR: m-tolylidene diisocyanate

TSCA 12(b) one-time export: 4-chloro-trifluorotoluene

Clean Water Act (CWA) 307: benzene; ethylbenzene

Clean Water Act (CWA) 311: benzene; xylene; ethylbenzene; phosphoric acid

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

| Product/ingredient name | CAS number | Concentration |
|-------------------------|------------|---------------|
| benzene | 71-43-2 | 0.0035754 |
| methanol | 67-56-1 | 0.001293 |
| xylene | 1330-20-7 | 0.0042312 |

Clean Air Act Section 602 Class I Substances : Not listed

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SECTION 15: Regulatory information

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Listed

SARA 311/312 Classification : FLAMMABLE LIQUIDS - Category 2
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
RESPIRATORY SENSITIZATION - Category 1
SKIN SENSITIZATION - Category 1
CARCINOGENICITY - Category 1A
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1

| Product/ingredient name | % | Classification |
|--|---------------------|---|
| Poly[oxy(methyl-1,2-ethanediyl)], α-hydro-ω-hydroxy-, polymer with 1,3-diisocyanatomethylbenzene | ≥25 - ≤50 | ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 |
| 4-chloro-trifluorotoluene | ≥10 - ≤25 | FLAMMABLE LIQUIDS - Category 3 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A SKIN SENSITIZATION - Category 1B SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 |
| 1,6-hexanediyl-bis(2-(2-(1-ethylpentyl)-3-oxazolidinyl)ethyl)carbamate acetone | ≥5 - ≤10 ≥3 - ≤5 | SERIOUS EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 FLAMMABLE LIQUIDS - Category 2 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 |
| quartz (chrySTALLINE, non respirable) | ≥1 - ≤3 | SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 |
| respirable quartz | ≥1 - ≤3 | CARCINOGENICITY - Category 1A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 |
| m-tolylidene diisocyanate | <1 | ACUTE TOXICITY (inhalation) - Category 1 SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A RESPIRATORY SENSITIZATION - Category 1 SKIN SENSITIZATION - Category 1 CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 |

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

Form R - Reporting requirements :

| Product/ingredient name | CAS number | Concentration |
|---------------------------|------------|---------------|
| m-tolylidene diisocyanate | 26471-62-5 | 0 - 1 |

Supplier notification :

| Product/ingredient name | CAS number | Concentration |
|---------------------------|------------|---------------|
| m-tolylidene diisocyanate | 26471-62-5 | 0 - 1 |

State regulations :

Connecticut Carcinogen Reporting: None of the components are listed.
Connecticut Hazardous Material Survey: None of the components are listed.
Florida substances: None of the components are listed.
Illinois Chemical Safety Act: None of the components are listed.
Illinois Toxic Substances Disclosure to Employee Act: None of the components are listed.
Louisiana Reporting: None of the components are listed.
Louisiana Spill: None of the components are listed.
Massachusetts Spill: None of the components are listed.
Massachusetts Substances: The following components are listed: SILICA, CRYSTALLINE, QUARTZ; SILICA, CRYSTALLINE, QUARTZ; ACETONE; TITANIUM DIOXIDE; TIN DIOXIDE DUST
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: The following components are listed: TOLUENE DIISOCYANATE (mixed isomers); BENZENE, 1,3-DIISOCYANATOMETHYL-; SILICA, QUARTZ; QUARTZ (SiO₂); SILICA, QUARTZ; QUARTZ (SiO₂); ACETONE; 2-PROPANONE; TITANIUM DIOXIDE; TITANIUM OXIDE (TiO₂); CARBON BLACK

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New Jersey Spill: None of the components are listed.

New Jersey Toxic Catastrophe Prevention Act: None of the components are listed.

New York Acutely Hazardous Substances: The following components are listed: Toluene diisocyanate; Acetone; 2-Propanone

New York Toxic Chemical Release Reporting: None of the components are listed.

Pennsylvania RTK Hazardous Substances: The following components are listed: BENZENE, 2,4-DIISOCYANATOMETHYL-; QUARTZ DUST; QUARTZ; QUARTZ DUST; QUARTZ; 2-PROPANONE; TITANIUM OXIDE; CARBON BLACK

Rhode Island Hazardous Substances: None of the components are listed.

California Prop. 65 PFF :

WARNING: This product can expose you to chemicals including Benzene, which is known to the State of California to cause cancer and birth defects or other reproductive harm. This product can expose you to chemicals including p-chloro- α,α,α -trifluorotoluene, Silica, crystalline, Titanium dioxide, Silica, crystalline, Toluene diisocyanate, Carbon black and Ethylbenzene, which are known to the State of California to cause cancer, and Methanol, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

| Product/ingredient name | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|---------------------------------------|--------|--------------|---------------------------|---------------------------------|
| 4-chloro-trifluorotoluene | Yes. | No. | | |
| quartz (chrystalline, non respirable) | Yes. | No. | | |
| titanium dioxide | Yes. | No. | | |
| respirable quartz | Yes. | No. | | |
| m-tolylidene diisocyanate | Yes. | No. | Yes. | |
| carbonblack | Yes. | No. | | |
| benzene | Yes. | Yes. | Yes. | Yes. |
| methanol | No. | Yes. | | Yes. |
| ethylbenzene | Yes. | No. | Yes. | |

SECTION 16: Other information

Remarks :

Note: In USA, consult Code of Federal Regulations, Title 29, Labor, Parts 1910 and 1915 concerning occupational safety and health standards and regulations, as well as any other applicable Federal, State or local regulations that apply to safe practices in coating operations.

Warning! If you scrape, sand, or remove old paint, you may release lead dust. LEAD is TOXIC.

Validation :

Validated by US - HSE Products Coordinator on 16 April 2020

GHS Classification

Procedure used to derive the classification.

| Classification | Justification |
|--|-----------------------|
| FLAMMABLE LIQUIDS - Category 2 | On basis of test data |
| ACUTE TOXICITY (oral) - Category 4 | Calculation method |
| ACUTE TOXICITY (inhalation) - Category 4 | Calculation method |
| SKIN IRRITATION - Category 2 | Calculation method |
| SERIOUS EYE DAMAGE - Category 1 | Calculation method |
| RESPIRATORY SENSITIZATION - Category 1 | Calculation method |
| SKIN SENSITIZATION - Category 1 | Calculation method |
| CARCINOGENICITY - Category 1A | Calculation method |
| SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Respiratory tract irritation) - Category 3 | Calculation method |
| SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 1 | Calculation method |

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

| | |
|---------------------|-----|
| Health | * 3 |
| Fire hazard | 3 |
| Physical hazards | 0 |
| Personal protection | X |

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

| | | | | |
|--------|---|---|---|--------------|
| Health | 2 | 3 | 1 | Flammability |
| | | | | Instability |
| | | | | Special |

Personal Protective Equipment (PPE) shown in this section is a suggestion. Since conditions vary from one work location to another consult the facility safety & health program. Customer or end user is responsible to evaluate worker exposure conditions at the site of application and determine the appropriate PPE suitable for workers at that particular facility or location.

Abbreviations and acronyms :

ANSI = American National Standards Institute
HCS = Hazardous Communication System
TSCA = Toxic Substances Control Act
CFR = Code of federal Regulations
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
OSHA = United States Occupational Health and Safety Administration
NIOSH = National Institute for Occupational Safety and Health
ACGIH = American Conference of Industrial Hygienists
IARC = International Agency for Research on Cancer.
NTP = National Toxicology Program
ATE = Acute Toxicity Estimate

OECD = Organisation for Economic Co-operation and Development
BCF = Bioconcentration Factor
DOT = United States Department of Transportation
ERG = Emergency Response Guide
TDG = Transport of Dangerous Goods, Canada
SCT = Transportation & Communications Ministry, Mexico
IMDG = International Maritime Dangerous Goods
IATA = International Air Transport Association
SARA = Superfund Amendments Reauthorization Act
EPCRA = Emergency Planning and Community Right to Know Act

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SECTION 16: Other information

Notice to reader

Indicates information that has changed from previously issued version.

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.