

SAFETY DATA SHEET

Fluid Resistant Epoxy Primer 463-12-8

Section 1. Identification

GHS product identifier : Fluid Resistant Epoxy Primer 463-12-8
Other means of identification : 37052/065724 Epoxy primer 37052 green

Relevant identified uses of the substance or mixture and uses advised against
: FOR INDUSTRIAL USE ONLY

Supplier/Manufacturer : Akzo Nobel Coatings, Inc.
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CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

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Akzo Nobel Coatings Inc. encourages and expects you to read and understand this entire MSDS, as there is important information throughout the document. Further, Akzo Nobel Coatings Inc. expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information contained in this MSDS and any other information regarding hazards and safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information; and 4) Notify its employees, agents, contractors, and others that the precautions identified for this product and any other products with which mixtures may be created are transferable and cumulative to the mixture.

Section 2. Hazards identification

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

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
CARCINOGENICITY - Category 1A

Section 2. Hazards identification

GHS label elements

Hazard pictograms



Signal word

: Danger

Hazard statements

: Highly flammable liquid and vapor.
 Causes serious eye irritation.
 Causes skin irritation.
 May cause cancer.

Precautionary statements

Prevention

: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves. Wear eye or face protection. Wear protective clothing. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Wash hands thoroughly after handling. Ground/bond container and receiving equipment.

Response

: IF exposed or concerned: Get medical attention. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation 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. Store in a well-ventilated place. Keep cool.

Disposal

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

Hazards not otherwise classified

: None known.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

| Ingredient name | % | CAS number |
|--|---------|------------|
| Talc , not containing asbestiform fibres | 10 - 15 | 14807-96-6 |
| Mica-group minerals | 5 - 10 | 12001-26-2 |
| butanone | 5 - 10 | 78-93-3 |
| 4-methylpentan-2-one | 5 - 10 | 108-10-1 |
| xylene | 5 - 10 | 1330-20-7 |
| strontium chromate | 5 - 10 | 7789-06-2 |
| n-butyl acetate | 5 - 10 | 123-86-4 |
| butan-1-ol | 1 - 5 | 71-36-3 |
| titanium dioxide | 1 - 5 | 13463-67-7 |
| ethylbenzene | 1 - 5 | 100-41-4 |
| Chlorite-group minerals | 1 - 5 | 1318-59-8 |
| barium chromate | 0 - 1 | 10294-40-3 |

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

Section 3. Composition/information on ingredients

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

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

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of 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. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

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

Over-exposure signs/symptoms

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

Section 4. First aid measures

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

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

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

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).

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). 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 ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|--|--|
| Talc , not containing asbestiform fibres | <p>NIOSH REL (United States, 10/2013). TWA: 2 mg/m³ 10 hours. Form: Respirable fraction</p> <p>ACGIH TLV (United States, 3/2015). TWA: 2 mg/m³ 8 hours. Form: Respirable fraction</p> <p>OSHA PEL Z3 (United States, 2/2013). TWA: 0.1 f/cc 8 hours. Form: containing asbestos STEL: 1 f/cc 30 minutes. Form: containing asbestos STEL: 1 f/cc 30 minutes. Form: not containing asbestos TWA: 20 mppcf 8 hours. Form: not containing asbestos</p> |
| Mica-group minerals | <p>ACGIH TLV (United States, 3/2015). TWA: 3 mg/m³ 8 hours. Form: Respirable fraction</p> <p>NIOSH REL (United States, 10/2013). TWA: 3 mg/m³ 10 hours. Form: Respirable fraction</p> <p>OSHA PEL Z3 (United States, 2/2013). TWA: 20 mppcf 8 hours.</p> |
| butanone | <p>ACGIH TLV (United States, 3/2015). STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2013). STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 10 hours. TWA: 200 ppm 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours.</p> |
| 4-methylpentan-2-one | <p>ACGIH TLV (United States, 3/2015). STEL: 75 ppm 15 minutes. TWA: 20 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2013). STEL: 300 mg/m³ 15 minutes. STEL: 75 ppm 15 minutes. TWA: 205 mg/m³ 10 hours. TWA: 50 ppm 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 410 mg/m³ 8 hours. TWA: 100 ppm 8 hours.</p> |

Section 8. Exposure controls/personal protection

| | |
|--------------------|---|
| xylene | <p>ACGIH TLV (United States, 3/2015). STEL: 651 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 434 mg/m³ 8 hours. TWA: 100 ppm 8 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.</p> |
| strontium chromate | <p>ACGIH TLV (United States, 3/2015). TWA: 0.0005 mg/m³, (measured as Cr) 8 hours.</p> <p>OSHA PEL Z2 (United States, 2/2013). CEIL: 1 mg/10m³</p> <p>OSHA PEL (United States, 2/2013). TWA: 0.005 mg/m³, (as Cr) 8 hours.</p> <p>NIOSH REL (United States, 10/2013). TWA: 0.0002 mg/m³, (as CR) 8 hours.</p> |
| n-butyl acetate | <p>ACGIH TLV (United States, 3/2015). STEL: 200 ppm 15 minutes. TWA: 150 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2013). STEL: 950 mg/m³ 15 minutes. STEL: 200 ppm 15 minutes. TWA: 710 mg/m³ 10 hours. TWA: 150 ppm 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 710 mg/m³ 8 hours. TWA: 150 ppm 8 hours.</p> |
| butan-1-ol | <p>ACGIH TLV (United States, 3/2015). TWA: 20 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2013). Absorbed through skin. CEIL: 150 mg/m³ CEIL: 50 ppm</p> <p>OSHA PEL (United States, 2/2013). TWA: 300 mg/m³ 8 hours. TWA: 100 ppm 8 hours.</p> |
| titanium dioxide | <p>OSHA PEL (United States, 2/2013). TWA: 15 mg/m³ 8 hours. Form: Total dust</p> <p>ACGIH TLV (United States, 3/2015). TWA: 10 mg/m³ 8 hours.</p> |
| ethylbenzene | <p>ACGIH TLV (United States, 3/2015). TWA: 20 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2013). STEL: 545 mg/m³ 15 minutes. STEL: 125 ppm 15 minutes. TWA: 435 mg/m³ 10 hours. TWA: 100 ppm 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 435 mg/m³ 8 hours. TWA: 100 ppm 8 hours.</p> |

Section 8. Exposure controls/personal protection

Chlorite-group minerals
barium chromate

None.
ACGIH TLV (United States, 3/2015).
TWA: 0.01 mg/m³, (measured as Cr) 8 hours.
Form: Insoluble
OSHA PEL Z2 (United States, 2/2013).
CEIL: 1 mg/10m³
OSHA PEL (United States, 2/2013).
TWA: 0.005 mg/m³, (as Cr) 8 hours.
NIOSH REL (United States, 10/2013).
TWA: 0.0002 mg/m³, (as CR) 8 hours.

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Section 8. Exposure controls/personal protection

Respiratory protection : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

| | | |
|---|-----------------------|---|
| | Physical state | : Liquid. |
| | Color | : Green. |
| Odor | | : TYPICAL. |
| Odor threshold | | : Not available. |
| pH | | : Not available. |
| Melting/freezing point | | : Not available. |
| Boiling point | | : 80°C (176°F) |
| boiling range | | : Not available. |
| Flash point | | : Closed cup: 4°C (39.2°F) |
| Evaporation rate | | : Not available. |
| Flammability (solid, gas) | | : Not available. |
| Upper/lower flammability or explosive limits | | |
| | Upper: | : Not determined. |
| | Lower: | : Not determined. |
| Vapor pressure | | : Not available. |
| Vapor density | | : Not available. |
| Relative density | | : 1.291 |
| Density | : 10.77 lbs/gal | 1.291 g/cm ³ |
| Solubility | | : Not available. |
| Solubility in water | | : Not available. |
| Partition coefficient: n-octanol/water | | : Not available. |
| Auto-ignition temperature | | : Not available. |
| Decomposition temperature | | : Not available. |
| Viscosity | | : Kinematic (room temperature): 1.94 cm ² /s (194 cSt) |
| Weight Volatiles | | : 36.76% (w/w) |
| Volume Volatiles | | : 56.39 % (v/v) |
| Weight Solids | | : 63.24 % (w/w) |
| Volume Solids | | : 43. % (v/v) |
| | | 611469812 |
| Regulatory VOC | : 4.0 lbs/gal | 475 g/l minus water and exempt solvents |
| VOC Actual | : 4.0 lbs/gal | 475 g/l |

Section 10. Stability and reactivity

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

Chemical stability : The product is stable.

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

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

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

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|-----------------------|---------|--------------|----------|
| butanone | LD50 Dermal | Rabbit | 6480 mg/kg | - |
| | LD50 Oral | Rat | 2737 mg/kg | - |
| 4-methylpentan-2-one | LD50 Oral | Rat | 2080 mg/kg | - |
| | LD50 Oral | Rat | 4300 mg/kg | - |
| strontium chromate | LD50 Oral | Rat | 3118 mg/kg | - |
| n-butyl acetate | LC50 Inhalation Vapor | Rat | 390 ppm | 4 hours |
| | LD50 Dermal | Rabbit | >17600 mg/kg | - |
| butan-1-ol | LD50 Oral | Rat | 10768 mg/kg | - |
| | LD50 Dermal | Rabbit | 3400 mg/kg | - |
| ethylbenzene | LD50 Oral | Rat | 790 mg/kg | - |
| | LD50 Dermal | Rabbit | >5000 mg/kg | - |
| | LD50 Oral | Rat | 3500 mg/kg | - |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|--|--------------------------|---------|-------|--------------------------------------|-------------|
| Talc , not containing asbestiform fibres | Skin - Mild irritant | Human | - | 72 hours 300 Micrograms Intermittent | - |
| butanone | Skin - Mild irritant | Rabbit | - | 24 hours 14 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 500 milligrams | - |
| 4-methylpentan-2-one | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 microliters | - |
| | Eyes - Severe irritant | Rabbit | - | 40 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 milligrams | - |
| xylene | Eyes - Mild irritant | Rabbit | - | 87 milligrams | - |

Section 11. Toxicological information

| | | | | | |
|------------------|--|------------------|--------|--------------------------------------|--------|
| n-butyl acetate | Eyes - Severe irritant | Rabbit | - | 24 hours 5 milligrams | - |
| | Skin - Mild irritant | Rat | - | 8 hours 60 microliters | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Skin - Moderate irritant Eyes - Moderate irritant | Rabbit Rabbit | - - | 100 Percent 100 milligrams | - - |
| butan-1-ol | Skin - Moderate irritant | Rabbit | - | 24 hours 500 milligrams | - |
| | Eyes - Severe irritant | Rabbit | - | 24 hours 2 milligrams | - |
| titanium dioxide | Eyes - Severe irritant | Rabbit | - | 0.005 Milliliters | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| | Skin - Mild irritant | Human | - | 72 hours 300 Micrograms Intermittent | - |
| ethylbenzene | Eyes - Severe irritant | Rabbit | - | 500 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 15 milligrams | - |

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

| Product/ingredient name | OSHA | IARC | NTP |
|--|------|------|---------------------------------|
| Talc , not containing asbestiform fibres | - | 3 | - |
| 4-methylpentan-2-one | - | 2B | - |
| xylene | - | 3 | - |
| strontium chromate | + | 1 | Known to be a human carcinogen. |
| titanium dioxide | - | 2B | - |
| ethylbenzene | - | 2B | - |
| barium chromate | + | 1 | Known to be a human carcinogen. |

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Section 11. Toxicological information

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

| Name | Result |
|--------------|--------------------------------|
| ethylbenzene | ASPIRATION HAZARD - Category 1 |

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

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

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

Short term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Long term exposure

Potential immediate effects : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Not available.

General : No known significant effects or critical hazards.
Carcinogenicity : May cause 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.

Section 11. Toxicological information

Numerical measures of toxicity

Acute toxicity estimates

| Route | ATE value |
|--------|---------------|
| Oral | 2836.3 mg/kg |
| Dermal | 40482.3 mg/kg |

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|--|--|----------|
| butanone | Acute EC50 >500000 µg/l Marine water | Algae - Skeletonema costatum | 96 hours |
| | Acute EC50 5091000 to 6440000 µg/l Fresh water | Daphnia - Daphnia magna - Larvae | 48 hours |
| 4-methylpentan-2-one | Acute LC50 5600 ppm Fresh water | Fish - Gambusia affinis - Adult | 96 hours |
| | Acute LC50 505000 to 514000 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Chronic NOEC 78 mg/l Fresh water | Daphnia - Daphnia magna | 21 days |
| xylene | Chronic NOEC 168 mg/l Fresh water | Fish - Pimephales promelas - Embryo | 33 days |
| | Acute LC50 8500 µg/l Marine water | Crustaceans - Palaemonetes pugio | 48 hours |
| n-butyl acetate | Acute LC50 13400 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Acute LC50 62000 µg/l | Fish - Danio rerio | 96 hours |
| butan-1-ol | Acute EC50 1983000 to 2072000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 1910000 µg/l Fresh water | Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| ethylbenzene | 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 2930 to 4400 µg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 40000 µg/l Marine water | Crustaceans - Cancer magister - Zoea | 48 hours |
| | Acute LC50 4200 µg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours |

Persistence and degradability

Not available.

Bioaccumulative potential

Section 12. Ecological information

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-------------------------|--------------------|-------------|-----------|
| butanone | 0.3 | - | low |
| 4-methylpentan-2-one | 1.9 | - | low |
| xylene | 3.12 | 8.1 to 25.9 | low |
| n-butyl acetate | 2.3 | - | low |
| butan-1-ol | 1 | - | low |
| ethylbenzene | 3.6 | - | low |

Mobility in soil

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

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

Section 13. Disposal considerations








Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Special precautions for user : Please Note: The information provided in section 14 is based on a bulk package shipment via ground transport in North America. All shippers are responsible for ensuring the proper transportation classification and package/container requirements are followed for the relevant mode of transport.

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

| | DOT Classification | TDG Classification | Mexico Classification | IMDG | IATA |
|----------------------------|--|---|--|---|--|
| UN number | UN1263 | UN1263 | UN1263 | UN1263 | UN1263 |
| UN proper shipping name | PAINT | PAINT | PAINT | PAINT | PAINT |
| Transport hazard class(es) | 3  | 3   | 3  | 3   | 3  |
| Packing group | II | II | II | II | II |
| Environmental hazards | No. | Yes. | No. | Yes. | No. |

Section 15. Regulatory information

U.S. Federal regulations

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

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard
Delayed (chronic) health hazard

SARA 313

| | Product name | CAS number | % |
|--|----------------------|------------|---------|
| Form R - Reporting requirements | 4-methylpentan-2-one | 108-10-1 | 5 - 10 |
| | xylene | 1330-20-7 | 5 - 10 |
| | strontium chromate | 7789-06-2 | 5 - 10 |
| | butan-1-ol | 71-36-3 | 1 - 5 |
| | ethylbenzene | 100-41-4 | 1 - 5 |
| | barium chromate | 10294-40-3 | 0.1 - 1 |

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

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

Section 15. Regulatory information

| Ingredient name | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|-------------------------|--------|--------------|---------------------------|---------------------------------|
| 4-methylpentan-2-one | Yes. | No. | No. | No. |
| strontium chromate | Yes. | Yes. | No. | No. |
| titanium dioxide | Yes. | No. | No. | No. |
| ethylbenzene | Yes. | No. | No. | No. |
| barium chromate | Yes. | Yes. | No. | No. |
| toluene | No. | Yes. | No. | 7000 µg/day (ingestion) |
| carbon black respirable | Yes. | No. | No. | No. |

International lists

National inventory

| | |
|--------------------------|--|
| Australia | : All components are listed or exempted. |
| Canada | : At least one component is not listed. |
| China | : All components are listed or exempted. |
| Europe | : At least one component is not listed. |
| Japan | : Japan inventory (ENCS) : At least one component is not listed. Japan inventory (ISHL) : At least one component is not listed. |
| Malaysia | : At least one component is not listed. |
| 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. |
| Turkey | : At least one component is not listed. |

Section 16. Other information

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

| | | |
|------------------|---|---|
| Health | * | 2 |
| Flammability | | 3 |
| Physical hazards | | 0 |
| | | |

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

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

Section 16. Other information



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 2 November 2018

Version : 2

MSDS # : A47556 0008 000D8C52A0

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

Notice to reader

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.

SAFETY DATA SHEET

Curing Solution CA-116 For 463-12-8

Section 1. Identification

GHS product identifier : Curing Solution CA-116 For 463-12-8
Other means of identification : 92105/000000 Hardener CA 116

Relevant identified uses of the substance or mixture and uses advised against
: FOR INDUSTRIAL USE ONLY

Supplier/Manufacturer : Akzo Nobel Coatings, Inc.
1 East Water Street
Waukegan, IL 60085
USA
Tel. 1 847 623 4200
Email: customer.
service@akzonobel.com

Canadian Supplier : Akzo Nobel Coatings Ltd.
110 Woodbine Downs Blvd.
Unit #4 Etobicoke, Ontario
Canada M9W 5S6
+1 (800) 618-1010

Emergency telephone number : CHEMTREC +1 (800) 424-9300 (Inside the US)
CHEMTREC International +1 (703) 527-3887 (Outside the US, collect calls accepted)

Date of issue / Date of revision : 13 November 2018

Safety Data Sheet Version : 2

Date of printing : 13 November 2018

Akzo Nobel Coatings Inc. encourages and expects you to read and understand this entire MSDS, as there is important information throughout the document. Further, Akzo Nobel Coatings Inc. expects you to follow the precautions identified in this document unless your use conditions would necessitate other appropriate methods or actions.

To promote safe handling, each customer or recipient should: 1) Notify its employees, agents, contractors, and others whom it knows or believes will use this material of the information contained in this MSDS and any other information regarding hazards and safety; 2) Furnish this same information to each of its customers for the product; 3) Request its customers to notify their employees, customers, and other users of the product of this information; and 4) Notify its employees, agents, contractors, and others that the precautions identified for this product and any other products with which mixtures may be created are transferable and cumulative to the mixture.

Section 2. Hazards identification

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

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 2
ACUTE TOXICITY (oral) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A

Section 2. Hazards identification

GHS label elements

Hazard pictograms :



Signal word :

Danger

Hazard statements :

Highly flammable liquid and vapor.
Harmful if swallowed.
Causes serious eye irritation.
Causes skin irritation.

Precautionary statements

Prevention :

Wear protective gloves. Wear eye or face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. Use only non-sparking tools. Take precautionary measures against static discharge. Keep container tightly closed. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Ground/bond container and receiving equipment.

Response :

IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention.

Storage :

Store in a well-ventilated place. Keep cool.

Disposal :

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

Hazards not otherwise classified

: None known.

Section 3. Composition/information on ingredients

Substance/mixture :

Mixture

| Ingredient name | % | CAS number |
|--|---------|------------|
| butanone | 60 - 65 | 78-93-3 |
| butan-1-ol | 10 - 15 | 71-36-3 |
| Isopropyl alcohol | 10 - 15 | 67-63-0 |
| toluene | 1 - 5 | 108-88-3 |
| 2,4,6-tris(dimethylaminomethyl)phenol | 1 - 5 | 90-72-2 |
| N-(3-(trimethoxysilyl)propyl)ethylenediamine | 1 - 5 | 1760-24-3 |

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

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

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

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. 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 case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- 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** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation.
- Ingestion** : Harmful if swallowed.

Over-exposure signs/symptoms

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

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

Section 4. First aid measures

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. 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 dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Specific hazards arising from the chemical : Highly flammable liquid and vapor. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. Runoff to sewer may create fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
metal oxide/oxides

Special protective actions for fire-fighters : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

For emergency responders : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Section 6. Accidental release measures

- 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). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Section 8. Exposure controls/personal protection

| Ingredient name | Exposure limits |
|---|---|
| butanone | <p>ACGIH TLV (United States, 3/2015). STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2013). STEL: 885 mg/m³ 15 minutes. STEL: 300 ppm 15 minutes. TWA: 590 mg/m³ 10 hours. TWA: 200 ppm 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 590 mg/m³ 8 hours. TWA: 200 ppm 8 hours.</p> |
| butan-1-ol | <p>ACGIH TLV (United States, 3/2015). TWA: 20 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2013). Absorbed through skin. CEIL: 150 mg/m³ CEIL: 50 ppm</p> <p>OSHA PEL (United States, 2/2013). TWA: 300 mg/m³ 8 hours. TWA: 100 ppm 8 hours.</p> |
| Isopropyl alcohol | <p>ACGIH TLV (United States, 3/2015). STEL: 400 ppm 15 minutes. TWA: 200 ppm 8 hours.</p> <p>NIOSH REL (United States, 10/2013). STEL: 1225 mg/m³ 15 minutes. STEL: 500 ppm 15 minutes. TWA: 980 mg/m³ 10 hours. TWA: 400 ppm 10 hours.</p> <p>OSHA PEL (United States, 2/2013). TWA: 980 mg/m³ 8 hours. TWA: 400 ppm 8 hours.</p> |
| toluene | <p>NIOSH REL (United States, 10/2013). STEL: 560 mg/m³ 15 minutes. STEL: 150 ppm 15 minutes. TWA: 375 mg/m³ 10 hours. TWA: 100 ppm 10 hours.</p> <p>OSHA PEL Z2 (United States, 2/2013). AMP: 500 ppm 10 minutes. CEIL: 300 ppm TWA: 200 ppm 8 hours.</p> <p>ACGIH TLV (United States, 3/2015). TWA: 20 ppm 8 hours.</p> |
| 2,4,6-tris(dimethylaminomethyl)phenol N-(3-(trimethoxysilyl)propyl)ethylenediamine | <p>None. None.</p> |

Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid.
- Color** : Not available.
- Odor** : TYPICAL.
- Odor threshold** : Not available.
- pH** : Not available.
- Melting/freezing point** : Not available.

Section 9. Physical and chemical properties

| | |
|---|--|
| Boiling point | : 80°C (176°F) |
| boiling range | : Not available. |
| Flash point | : Closed cup: -4°C (24.8°F) |
| Evaporation rate | : Not available. |
| Flammability (solid, gas) | : Not available. |
| Upper/lower flammability or explosive limits | |
| | Upper: : Not determined. |
| | Lower: : Not determined. |
| Vapor pressure | : Not available. |
| Vapor density | : Not available. |
| Relative density | : 0.812 |
| Density | : 6.78 lbs/gal 0.812 g/cm ³ |
| Solubility | : Not available. |
| Solubility in water | : Not available. |
| Partition coefficient: n-octanol/water | : Not available. |
| Auto-ignition temperature | : Not available. |
| Decomposition temperature | : Not available. |
| Viscosity | : Kinematic (room temperature): 0.49 cm ² /s (49 cSt) |
| Weight Volatiles | : 95.5% (w/w) |
| Volume Volatiles | : 96.33 % (v/v) |
| Weight Solids | : 4.50 % (w/w) |
| Volume Solids | : 3. % (v/v) 669518087 |
| Regulatory VOC | : 6.5 lbs/gal 775 g/l minus water and exempt solvents |
| VOC Actual | : 6.5 lbs/gal 775 g/l |

Section 10. Stability and reactivity

| | |
|---|---|
| Reactivity | : No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | : The product is stable. |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur. |
| Conditions to avoid | : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |
| Incompatible materials | : Reactive or incompatible with the following materials: oxidizing materials |
| Hazardous decomposition products | : Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|--|-------------|---------|-------------|----------|
| butanone | LD50 Dermal | Rabbit | 6480 mg/kg | - |
| | LD50 Oral | Rat | 2737 mg/kg | - |
| butan-1-ol | LD50 Dermal | Rabbit | 3400 mg/kg | - |
| | LD50 Oral | Rat | 790 mg/kg | - |
| Isopropyl alcohol | LD50 Dermal | Rabbit | 12800 mg/kg | - |
| | LD50 Oral | Rat | 5000 mg/kg | - |
| toluene | LD50 Oral | Rat | 636 mg/kg | - |
| | LD50 Dermal | Rat | 1280 mg/kg | - |
| 2,4,6-tris (dimethylaminomethyl)phenol | LD50 Oral | Rat | 1200 mg/kg | - |
| | LD50 Oral | Rat | 2413 mg/kg | - |
| N-(3-(trimethoxysilyl)propyl) ethylenediamine | | | | |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|---|--------------------------|---------|-------|----------------------------|-------------|
| butanone | Skin - Mild irritant | Rabbit | - | 24 hours 14 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 500 milligrams | - |
| butan-1-ol | Eyes - Severe irritant | Rabbit | - | 24 hours 2 milligrams | - |
| | Eyes - Severe irritant | Rabbit | - | 0.005 Milliliters | - |
| Isopropyl alcohol | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 milligrams | - |
| toluene | Eyes - Moderate irritant | Rabbit | - | 10 milligrams | - |
| | Eyes - Severe irritant | Rabbit | - | 100 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 500 milligrams | - |
| | Eyes - Mild irritant | Rabbit | - | 0.5 minutes 100 milligrams | - |
| 2,4,6-tris (dimethylaminomethyl)phenol | Eyes - Mild irritant | Rabbit | - | 870 Micrograms | - |
| | Eyes - Severe irritant | Rabbit | - | 24 hours 2 milligrams | - |
| | Skin - Mild irritant | Pig | - | 24 hours 250 microliters | - |
| | Skin - Mild irritant | Rabbit | - | 435 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 20 milligrams | - |
| | Skin - Moderate irritant | Rabbit | - | 500 milligrams | - |
| 2,4,6-tris (dimethylaminomethyl)phenol | Eyes - Severe irritant | Rabbit | - | 24 hours 50 Micrograms | - |

Section 11. Toxicological information

| | | | | | |
|---|------------------------|--------|---|-----------------------|---|
| N-(3-(trimethoxysilyl)propyl) ethylenediamine | Skin - Mild irritant | Rat | - | 0.025 Milliliters | - |
| | Skin - Severe irritant | Rat | - | 0.25 Milliliters | - |
| | Skin - Severe irritant | Rabbit | - | 24 hours 2 milligrams | - |
| | Eyes - Severe irritant | Rabbit | - | 15 milligrams | - |
| | Skin - Mild irritant | Rabbit | - | 500 milligrams | - |

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Classification

| Product/ingredient name | OSHA | IARC | NTP |
|-------------------------|------|------|-----|
| Isopropyl alcohol | - | 3 | - |
| toluene | - | 3 | - |

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.
Inhalation : No known significant effects or critical hazards.
Skin contact : Causes skin irritation.
Ingestion : Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Section 11. Toxicological information

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

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

Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Long term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

Potential chronic health effects

Not available.

- General** : No known significant effects or critical hazards.
- Carcinogenicity** : No known significant effects or critical hazards.
- 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 | 1936.6 mg/kg |
| Dermal | 17716.6 mg/kg |

Section 12. Ecological information

Toxicity

Section 12. Ecological information

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|---|--|----------|
| butanone | Acute EC50 >500000 µg/l Marine water | Algae - Skeletonema costatum | 96 hours |
| | Acute EC50 5091000 to 6440000 µg/l Fresh water | Daphnia - Daphnia magna - Larvae | 48 hours |
| butan-1-ol | Acute LC50 5600 ppm Fresh water | Fish - Gambusia affinis - Adult | 96 hours |
| | Acute EC50 1983000 to 2072000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| Isopropyl alcohol | Acute LC50 1910000 µg/l Fresh water | Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| | Acute LC50 1400000 to 1950000 µg/l Marine water | Crustaceans - Crangon crangon | 48 hours |
| | Acute LC50 4200 mg/l Fresh water | Fish - Rasbora heteromorpha | 96 hours |

Persistence and degradability

Not available.

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|---------------------------------------|--------------------|-----|-----------|
| butanone | 0.3 | - | low |
| butan-1-ol | 1 | - | low |
| Isopropyl alcohol | 0.05 | - | low |
| toluene | 2.73 | 90 | low |
| 2,4,6-tris(dimethylaminomethyl)phenol | 0.219 | - | low |

Mobility in soil

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

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






Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

Special precautions for user : Please Note: The information provided in section 14 is based on a bulk package shipment via ground transport in North America. All shippers are responsible for ensuring the proper transportation classification and package/container requirements are followed for the relevant mode of transport.

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.

| | DOT Classification | TDG Classification | Mexico Classification | IMDG | IATA |
|----------------------------|---|---|---|--|---|
| UN number | UN1263 | UN1263 | UN1263 | UN1263 | UN1263 |
| UN proper shipping name | PAINT RELATED MATERIAL | PAINT RELATED MATERIAL | PAINT RELATED MATERIAL | PAINT RELATED MATERIAL | PAINT RELATED MATERIAL |
| Transport hazard class(es) | 3  | 3  | 3  | 3  | 3  |
| Packing group | II | II | II | II | II |
| Environmental hazards | No. | No. | No. | No. | No. |

Section 15. Regulatory information

U.S. Federal regulations

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

SARA 311/312

Classification : Fire hazard
Immediate (acute) health hazard

SARA 313

| | Product name | CAS number | % |
|--|-----------------------|---------------------|------------------|
| Form R - Reporting requirements | butan-1-ol toluene | 71-36-3 108-88-3 | 10 - 15 1 - 5 |

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

California Prop. 65

WARNING: This product contains a chemical known to the State of California to cause birth defects or other reproductive harm.

Section 15. Regulatory information

| Ingredient name | Cancer | Reproductive | No significant risk level | Maximum acceptable dosage level |
|-----------------|--------|--------------|---------------------------|---------------------------------|
| toluene | No. | Yes. | No. | 7000 µg/day (ingestion) |

International lists

National inventory

| | |
|--------------------------|---|
| 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. |
| Japan | : Japan inventory (ENCS): All components are listed or exempted. Japan inventory (ISHL): At least one component is not listed. |
| Malaysia | : At least one component is not listed. |
| 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. |
| Turkey | : At least one component is not listed. |

Section 16. Other information

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

| | | |
|------------------|---|---|
| Health | * | 3 |
| Flammability | | 3 |
| Physical hazards | | 0 |
| | | |

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

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



Section 16. Other information

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

History

Date of issue/Date of revision : 13 November 2018

Version : 2

MSDS # : A36877 0017 0004C63AA0

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

Notice to reader

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.