

## Safety Data Sheet

FOR REGULATORY AND SDS QUESTIONS (U.S. AND CANADA):  
**CALL THE PRODUCT STEWARDSHIP LINE**  
**1- 908-791-2336 9 AM TO 6 PM ET (Mon-Fri)**

### Section 1. Identification

**Product name** : 2331-ZX Soldering Flux  
**Product code** : 4060030  
**Product type** : Liquid.  
**Date of issue/Date of revision** : September 30 2022.

Manufacturer - Supplier	Telephone no.:	Emergency phone:
Alpha Assembly Solutions Inc. 800 West Thorndale Avenue Itasca, IL 60143 USA	1-800-253-7837 1-630-616-4000	DOMESTIC NORTH AMERICA 202-464-2554
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### 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 CORROSION - Category 1B  
 SERIOUS EYE DAMAGE - Category 1  
 CARCINOGENICITY - Category 2  
 SPECIFIC TARGET ORGAN TOXICITY (Narcotic effects) - Category 3  
 SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) (blood system, kidneys, liver) - Category 2  
 AQUATIC HAZARD (ACUTE) - Category 3  
 AQUATIC HAZARD (LONG-TERM) - Category 3

#### GHS label elements

##### Hazard pictograms



**Signal word** : Danger

**Hazard statements** : Highly flammable liquid and vapor.  
 Causes severe skin burns and eye damage.  
 Suspected of causing cancer.  
 May cause drowsiness or dizziness.  
 May cause damage to organs through prolonged or repeated exposure. (blood system, kidneys, liver)  
 Harmful to aquatic life with long lasting effects.

#### Precautionary statements

*Continued on next page*

## Section 2. Hazards identification

- 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. Use only outdoors or in a well-ventilated area. Avoid release to the environment. Do not breathe vapor. Wash hands thoroughly after handling.
- Response** : Get medical attention if you feel unwell. IF exposed or concerned: Get medical attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or physician. IF SWALLOWED: Immediately call a POISON CENTER or physician. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or physician.
- 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.
- Supplemental label elements** : Do not taste or swallow. Wash thoroughly after handling.
- Hazards not otherwise classified** : Causes digestive tract burns.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

Ingredient name	%	CAS number
Isopropyl alcohol	60-70	67-63-0
Proprietary Additive(s)	10-20	-
Amine	1-10	-
Additive	1-10	-
l-(+)-lactic acid	1-10	79-33-4
Proprietary Organic Acid.	1-10	-

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** : Get medical attention immediately. Call a poison center or physician. Check for and remove any contact lenses. Immediately flush eyes with running water for at least 30 minutes, keeping eyelids open. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that mists are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain

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## Section 4. First aid measures

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** : Get medical attention immediately. Call a poison center or physician. 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 15 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. 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. Chemical burns must be treated promptly by a 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 damage.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes severe burns.
- Ingestion** : Corrosive to the digestive tract. Causes burns. Can cause central nervous system (CNS) depression.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain  
watering  
redness
- Inhalation** : Adverse symptoms may include the following:  
nausea or vomiting  
headache  
drowsiness/fatigue  
dizziness/vertigo  
unconsciousness
- Skin contact** : Adverse symptoms may include the following:  
pain or irritation  
redness  
blistering may occur
- Ingestion** : Adverse symptoms may include the following:  
stomach pains

### 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.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that mists 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)

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## Section 5. Fire-fighting measures

### Extinguishing media

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : 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 thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
halogenated compounds

**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. Do not breathe 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). Water polluting material. May be harmful to the environment if released in large quantities.

### 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.

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## 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 breathe vapor or mist. Do not ingest. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.

#### **Advice on general occupational hygiene**

: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

#### **Conditions for safe storage, including any incompatibilities**

: Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Isopropyl alcohol	<p><b>ACGIH TLV (United States, 3/2017). Notes: Refers to Appendix A -- Carcinogens. ACGIH 2003 Adoption</b>            STEL: 400 ppm 15 minutes.            TWA: 200 ppm 8 hours.</p> <p><b>NIOSH REL (United States, 10/2016).</b>            STEL: 1225 mg/m<sup>3</sup> 15 minutes.            STEL: 500 ppm 15 minutes.            TWA: 980 mg/m<sup>3</sup> 10 hours.            TWA: 400 ppm 10 hours.</p> <p><b>OSHA PEL (United States, 6/2016).</b>            TWA: 980 mg/m<sup>3</sup> 8 hours.            TWA: 400 ppm 8 hours.</p> <p><b>OSHA PEL 1989 (United States, 3/1989).</b>            STEL: 1225 mg/m<sup>3</sup> 15 minutes.            STEL: 500 ppm 15 minutes.            TWA: 980 mg/m<sup>3</sup> 8 hours.            TWA: 400 ppm 8 hours.</p>
Proprietary Additive(s)	<p><b>OSHA PEL (United States, 6/2016).</b>            TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction            TWA: 15 mg/m<sup>3</sup> 8 hours. Form: Total dust</p> <p><b>OSHA PEL 1989 (United States, 3/1989).</b>            TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Respirable fraction            TWA: 10 mg/m<sup>3</sup> 8 hours. Form: Total dust</p>
Amine	<p><b>OSHA PEL 1989 (United States, 3/1989).</b>            TWA: 3 ppm 8 hours.</p>

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## Section 8. Exposure controls/personal protection

TWA: 15 mg/m<sup>3</sup> 8 hours.  
 TWA: 15 mg/m<sup>3</sup> 8 hours. Form: All forms  
 TWA: 3 ppm 8 hours. Form: All forms  
**NIOSH REL (United States, 10/2016).**  
 TWA: 3 ppm 10 hours.  
 TWA: 15 mg/m<sup>3</sup> 10 hours.  
**NIOSH REL (United States, 6/2001).**  
 TWA: 15 mg/m<sup>3</sup> 10 hours. Form: All forms  
 TWA: 3 ppm 10 hours. Form: All forms  
**ACGIH TLV (United States, 3/2017). Absorbed through skin.**  
 TWA: 1 mg/m<sup>3</sup> 8 hours. Form: Inhalable fraction and vapor  
**ACGIH TLV (United States, 2/2003). Absorbed through skin.**  
**Notes: 1994-1995 Adoption**  
 TWA: 2 mg/m<sup>3</sup> 8 hours. Form: All forms  
 TWA: 0.46 ppm 8 hours. Form: All forms

- 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- 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.

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## Section 9. Physical and chemical properties

### Appearance

<b>Physical state</b>	: Liquid.
<b>Color</b>	: Yellowish.
<b>Odor</b>	: Alcohol-like.
<b>Odor threshold</b>	: Not available.
<b>pH</b>	: 6.5
<b>Melting point</b>	: Not available.
<b>Boiling point</b>	: 82°C (179.6°F)
<b>Flash point</b>	: Closed cup: 12°C (53.6°F)
<b>Evaporation rate</b>	: Not available.
<b>Flammability (solid, gas)</b>	: Not available.
<b>Lower and upper explosive (flammable) limits</b>	: Not available.
<b>Vapor pressure</b>	: 4.3 kPa (32.25258 mm Hg) [room temperature]
<b>Vapor density</b>	: Not available.
<b>Relative density</b>	: Not available.
<b>Solubility</b>	: Not available.
<b>VOC</b>	: 746.4 g/l
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: 370°C (698°F)
<b>Decomposition temperature</b>	: Not available.
<b>Viscosity</b>	: Not available.

### Aerosol product

## Section 10. Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: 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.
<b>Incompatibility with various substances</b>	: Reactive or incompatible with the following materials: oxidizing materials, reducing materials, metals, acids and alkalis.
<b>Hazardous decomposition products</b>	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
<b>Hazardous polymerization</b>	: Under normal conditions of storage and use, hazardous polymerization will not occur.

## Section 11. Toxicological information

**Routes of entry** : Dermal contact. Eye contact. Inhalation. Ingestion.

### Acute toxicity

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## Section 11. Toxicological information

Product/ingredient name	Result	Species	Dose	Exposure
Isopropyl alcohol	LD50 Dermal	Rabbit	6290 mg/kg	-
	LD50 Oral	Rat	4.7 g/kg	-
Proprietary Additive(s)	LD50 Intraperitoneal	Mouse	8700 mg/kg	-
	LD50 Intravenous	Rabbit	53 g/kg	-
	LD50 Oral	Guinea pig	7750 mg/kg	-
	LD50 Oral	Rat	12600 mg/kg	-
Amine	LD50 Dermal	Rabbit	8180 mg/kg	-
	LD50 Oral	Mouse	3300 mg/kg	-
	LD50 Oral	Rabbit	2200 mg/kg	-
	LD50 Oral	Rat	680 mg/kg	-
Additive	LD50 Oral	Rat	1070 mg/kg	-
	LD50 Dermal	Rabbit	>2000 mg/kg	-
I-(+)-lactic acid	LD50 Oral	Guinea pig	1810 mg/kg	-
	LDLo Oral	Rabbit	5 g/kg	-
	LC50 Inhalation Dusts and mists	Rat	3600 mg/m <sup>3</sup>	4 hours
	LD50 Oral	Guinea pig	1920 mg/kg	-
Proprietary Organic Acid.	LD50 Oral	Rat	1938 mg/kg	-
	LD50 Oral	Rat	1950 mg/kg	-
	LD50 Oral	Rat	1950 mg/kg	-

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Isopropyl alcohol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 milligrams	-
	Eyes - Moderate irritant	Rabbit	-	10 milligrams	-
	Eyes - Severe irritant	Rabbit	-	100 milligrams	-
Proprietary Additive(s)	Skin - Mild irritant	Rabbit	-	500 milligrams	-
	Eyes - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Amine	Eyes - Severe irritant	Rabbit	-	24 hours 750 Micrograms	-
	Eyes - Severe irritant	Rabbit	-	5500 milligrams	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 milligrams	-
Proprietary Organic Acid.	Skin - Mild irritant	Rabbit	-	50 milligrams	-
	Eyes - Severe irritant	Rabbit	-	2 milligrams	-
	Skin - Severe irritant	Rabbit	-	0.5 Milliliters	-

### Sensitization

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

No applicable toxicity data

### Additional information:

#### Classification

Product/ingredient name	OSHA	IARC	NTP
Isopropyl alcohol	-	3	-
Amine	-	2B	-

### Reproductive toxicity

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## Section 11. Toxicological information

Product/ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure
Amine	Positive	-	Positive	Rat - Female	Subcutaneous: 1500 mg/kg	9 days During Pregnancy; 6 hours per day
Additive	-	Positive	-	Rat - Male	Oral: 2500 ppm	13 weeks; 7 days per week
	Equivocal	-	-	Mouse	Intraperitoneal: 3825 mg/kg	-
	Equivocal	-	-	Mouse	Oral: 12 g/kg	-

### Teratogenicity

Not available.

### Specific target organ toxicity

Name	Category	Route of exposure	Target organs
Isopropyl alcohol	Category 3	Not applicable.	Narcotic effects

### Specific target organ toxicity (repeated exposure)

Name	Category	Route of exposure	Target organs
Amine	Category 2	Not determined	blood system, kidneys and liver

### Aspiration hazard

Not available.

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

### Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes severe burns.
- Ingestion** : Corrosive to the digestive tract. Causes burns. Can cause central nervous system (CNS) depression.

### Symptoms related to the physical, chemical and toxicological characteristics

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

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## Section 11. Toxicological information

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

### 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

Product/ingredient name	Result	Species	Dose	Exposure
Amine	Chronic TD50 Oral	Mouse	1000 mg/kg	-
	Chronic TD50 Oral	Rat	25 mg/kg	-

- General** : May cause damage to organs through prolonged or repeated exposure.
- Carcinogenicity** : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.
- Mutagenicity** : No known significant effects or critical hazards.
- Teratogenicity** : No known significant effects or critical hazards.
- Developmental effects** : No known significant effects or critical hazards.
- Fertility effects** : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
Oral	3494.4 mg/kg
Inhalation (dusts and mists)	12.13 mg/l

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Isopropyl alcohol	Acute EC50 10100 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1400000 µg/l Marine water	Crustaceans - Crangon crangon	48 hours
Amine	Acute LC50 4200 mg/l Fresh water	Fish - Rasbora heteromorpha	96 hours
	Acute EC50 12 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute LC50 28800 µg/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 100 mg/l	Daphnia	96 hours
	Acute LC50 >100 mg/l	Daphnia	96 hours
	Acute LC50 2150 µg/l Fresh water	Daphnia - Daphnia pulex	48 hours
	Acute LC50 100 mg/l	Fish	96 hours
	Acute LC50 >100 mg/l	Fish	96 hours
	Acute LC50 1370 mg/l	Fish	96 hours
	Acute LC50 1480 mg/l	Fish	96 hours
Additive	LC50 9 mg/l	Algae	96 hours

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## Section 12. Ecological information

l-(+)-lactic acid	Acute EC50 750 ppm Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 320000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
Proprietary Organic Acid.	Acute LC50 130 ppm Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Chronic NOEC 320000 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	EC50 44 mg/l	Algae	72 hours

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Isopropyl alcohol	0.05	-	low
Proprietary Additive(s)	-1.76	-	low
Amine	-1.43	-	low
Additive	-3.28	-	low
Proprietary Organic Acid.	<0.3	-	low

### Mobility in soil







**Soil/water partition coefficient (K<sub>oc</sub>)** : 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

	DOT Classification	TDG Classification	Mexico Classification	UN	IMDG	IATA
<b>UN number</b>	UN1219	UN1219	UN1219	UN1219	UN1219	UN1219
<b>UN proper shipping name</b>	Isopropanol solution	Isopropanol solution	Isopropanol solution	Isopropanol solution	Isopropanol solution	Isopropanol solution
<b>Transport hazard class(es)</b>	3 	3 	3 	3 	3 	3 
<b>Packing group</b>	II	II	II	II	II	II
<b>Environmental hazards</b>	No.	No.	No.	No.	No.	No.

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## Section 14. Transport information

Additional information - DOT Classification	ERG# 129
Additional information - TDG Classification	

**Special provisions for transport** :  Limited quantities (LQ) 1L  
 Excepted quantities (EQ) Code: E2  
 Maximum net quantity per inner packaging: 30 ml  
 Maximum net quantity per outer packaging: 500 ml

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory information

**U.S. Federal regulations** : TSCA 5(a)2 proposed significant new use rule (SNUR): No products were found.  
 TSCA 5(a)2 final significant new use rule (SNUR): No products were found.  
 TSCA 12(b) one-time export notification: No products were found.  
 TSCA 12(b) annual export notification: No products were found.

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

### SARA 302/304

#### Composition/information on ingredients

No products were found.

### SARA 311/312

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

### SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Amine	-	1-10
Supplier notification	Amine	-	1-10

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. **WARNING:** This product contains less than 1% of a chemical known to the State of California to cause birth defects or other reproductive harm.

### Canada

**Canada inventory** : At least one component is not listed in DSL but all such components are listed in NDSL.

### International lists

#### National inventory

**Australia** : All components are listed or exempted.

*Continued on next page*

## Section 15. Regulatory information

<b>China</b>	: All components are listed or exempted.
<b>Europe</b>	: Not determined.
<b>Japan</b>	: Not determined.
<b>Malaysia</b>	: Not determined.
<b>New Zealand</b>	: All components are listed or exempted.
<b>Philippines</b>	: All components are listed or exempted.
<b>Republic of Korea</b>	: All components are listed or exempted.
<b>Taiwan</b>	: Not determined.
<b>Thailand</b>	: Not determined.
<b>Turkey</b>	: Not determined.
<b>Viet Nam</b>	: Not determined.

## Section 16. Other information

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

<b>Health</b>	3
<b>Flammability</b>	3
<b>Physical hazards</b>	0

### Procedure used to derive the classification

Classification	Justification
Flam. Liq. 2, H225 Skin Corr. 1B, H314 Eye Dam. 1, H318 Carc. 2, H351 STOT SE 3, H336 STOT RE 2, H373 (blood system, kidneys, liver) Aquatic Acute 3, H402 Aquatic Chronic 3, H412	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

### History

<b>Date of issue/Date of revision</b>	: September 30 2022.
<b>Date of previous issue</b>	: January 23 2022.
<b>Version</b>	: 1.01
<b>Prepared by</b>	: <b>Regulatory Affairs Department</b> enthone.msds@macdermidenthone.com

<b>Key to abbreviations</b>	: 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
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▣ Indicates information that has changed from previously issued version.

### Notice to reader

*Continued on next page*

## Section 16. Other information

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

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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Kester SDS GHS Americas