

SAFETY DATA SHEET

OPA Reagent

Section 1. Identification

Product identifier : OPA Reagent

Part no. : 5061-3335

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

Identified uses : Reagents and Standards for Analytical Chemistry Laboratory Use
6 x 1 ml ampoule

Supplier/Manufacturer : Agilent Technologies, Inc.
5301 Stevens Creek Blvd
Santa Clara, CA 95051, USA
800-227-9770

Emergency telephone number (with hours of operation) : CHEMTREC®: 1-800-424-9300

Section 2. Hazard identification

Classification of the substance or mixture

H290	CORROSIVE TO METALS - Category 1
H302	ACUTE TOXICITY (oral) - Category 4
H314	SKIN CORROSION - Category 1A
H318	SERIOUS EYE DAMAGE - Category 1
H317	SKIN SENSITIZATION - Category 1A
H360	TOXIC TO REPRODUCTION - Category 1
	Health Hazards Not Otherwise Classified - Category 1
H411	AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements :

- H290 - May be corrosive to metals.
- H302 - Harmful if swallowed.
- H314 - Causes severe skin burns and eye damage.
- H317 - May cause an allergic skin reaction.
- H360 - May damage fertility or the unborn child.
- H411 - Toxic to aquatic life with long lasting effects.

Causes severe digestive tract burns.

Precautionary statements

Prevention :

- P201 - Obtain special instructions before use.
- P280 - Wear protective gloves, protective clothing and eye or face protection.
- P234 - Keep only in original packaging.
- P273 - Avoid release to the environment.
- P261 - Avoid breathing vapor.
- P270 - Do not eat, drink or smoke when using this product.
- P264 - Wash thoroughly after handling.

Section 2. Hazard identification

- Response** : P391 - Collect spillage.
P390 - Absorb spillage to prevent material damage.
P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P304 + P310 - IF INHALED: Immediately call a POISON CENTER or doctor.
P301 + P310, P330, P331 - IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting.
P303 + P361 + P353, P310 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor.
P363 - Wash contaminated clothing before reuse.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
P305 + P351 + P338, P310 - 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 doctor.
- Storage** : Not applicable.
- Disposal** : P501 - 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.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	Synonyms	% (w/w)	CAS number
Potassium hydroxide	Potassium hydroxide	≥5 - ≤10	1310-58-3
boric acid	Boric Acid	≥1 - ≤5	10043-35-3
3-Mercaptopropionic acid	3-Mercaptopropionic acid	≥1 - ≤5	107-96-0
Methanol	Methanol	≥1 - ≤5	67-56-1
Phthalaldehyde	o-Phthalaldehyde	≥1 - ≤5	643-79-8
Potassium thiocyanate	Potassium thiocyanate	≥1 - ≤5	333-20-0
Dodecan-1-ol, ethoxylated	Poly(oxy-1,2-ethanediyl), .alpha.-dodecyl-.omega.-hydroxy-	≥0.1 - ≤1	9002-92-0

Ranges if listed above for hazardous ingredient(s) are prescribed ranges. The actual concentration(s) or actual concentration range(s) are being withheld as a trade secret.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified 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. 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. Chemical burns must be treated promptly by a physician.

Section 4. First-aid measures

- 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 fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. 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** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. 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. 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** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns. May cause an allergic skin reaction.
- Ingestion** : Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 4. First-aid measures

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 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 an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
 carbon dioxide
 carbon monoxide
 nitrogen oxides
 sulfur oxides
 metal oxide/oxides
 Formaldehyde.

- 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.

- 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. 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. Collect spillage.

Section 6. Accidental release measures

Methods and materials for containment and cleaning up

- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. 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. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.

- 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 between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store in a corrosion resistant container with a resistant inner liner. Store locked up. Keep away from metals. 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
<p>Potassium hydroxide</p>	<p>CA Alberta Provincial (Canada, 6/2018). C: 2 mg/m³</p> <p>CA British Columbia Provincial (Canada, 6/2023). C: 2 mg/m³</p> <p>CA Ontario Provincial (Canada, 6/2019). Ceiling Limit: 2 mg/m³</p> <p>CA Quebec Provincial (Canada, 6/2022). STEV: 2 mg/m³ 15 minutes.</p> <p>CA Saskatchewan Provincial (Canada, 7/2013). CEIL: 2 mg/m³</p>
<p>boric acid</p>	<p>CA British Columbia Provincial (Canada, 6/2023). [Borate compounds, Inorganic]</p>

Section 8. Exposure controls/personal protection

	<p>TWA: 2 mg/m³ 8 hours. Form: Inhalable STEL: 6 mg/m³ 15 minutes. Form: Inhalable CA Saskatchewan Provincial (Canada, 7/2013). [Borate compounds, inorganic] STEL: 6 mg/m³ 15 minutes. Form: Inhalable fraction TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction CA Ontario Provincial (Canada, 6/2019). [Borate compounds, Inorganic] TWA: 2 mg/m³ 8 hours. Form: Inhalable particulate matter. STEL: 6 mg/m³ 15 minutes. Form: Inhalable particulate matter. CA Quebec Provincial (Canada, 6/2022). [borate, inorganic compounds] STEV: 6 mg/m³ 15 minutes. Form: inhalable dust TWAEV: 2 mg/m³ 8 hours. Form: inhalable dust</p>
Methanol	<p>CA Alberta Provincial (Canada, 6/2018). Absorbed through skin. OEL: 262 mg/m³ 8 hours. OEL: 200 ppm 8 hours. OEL: 250 ppm 15 minutes. OEL: 328 mg/m³ 15 minutes. CA British Columbia Provincial (Canada, 6/2023). Absorbed through skin. TWA: 200 ppm 8 hours. STEL: 250 ppm 15 minutes. CA Ontario Provincial (Canada, 6/2019). Absorbed through skin. TWA: 200 ppm 8 hours. STEL: 250 ppm 15 minutes. CA Quebec Provincial (Canada, 6/2022). Absorbed through skin. TWAEV: 200 ppm 8 hours. TWAEV: 262 mg/m³ 8 hours. STEV: 250 ppm 15 minutes. STEV: 328 mg/m³ 15 minutes. CA Saskatchewan Provincial (Canada, 7/2013). Absorbed through skin. STEL: 250 ppm 15 minutes. TWA: 200 ppm 8 hours.</p>
Phthalaldehyde	<p>CA British Columbia Provincial (Canada, 6/2023). Absorbed through skin. Skin sensitizer. Inhalation sensitizer. Notes: No British Columbia exposure limit at this time</p>
Potassium thiocyanate	<p>CA Quebec Provincial (Canada, 6/2022). [Cyanides] Absorbed through skin. STEV: 10 ppm, (as CN) 15 minutes. STEV: 11 mg/m³, (as CN) 15 minutes.</p>

Biological exposure indices

No exposure indices known.

Section 8. Exposure controls/personal protection

- Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.
- 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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- 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.
- 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 and safety characteristics

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

Appearance

- Physical state** : Liquid.
- Color** : Yellow. [Light]
- Odor** : Slight
- Odor threshold** : Not available.
- pH** : 10.4
- Melting point/freezing point** : Not available.

Section 9. Physical and chemical properties and safety characteristics

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

Flash point :

Ingredient name	Closed cup			Open cup		
	°C	°F	Method	°C	°F	Method
Methanol	9.7	49.5	Abel-Pensky	-	-	-
Phthalaldehyde	>110	>230	Setaflash	-	-	-

Evaporation rate : <1 (butyl acetate = 1)

Flammability : Not applicable.

Lower and upper explosion limit/flammability limit : Not available.

Vapor pressure :

Ingredient name	Vapor Pressure at 20°C			Vapor pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
Methanol	126.96329	16.9	-	-	-	-
water	17.5	2.3	-	92.258	12.3	-

Relative vapor density : Not available.

Relative density : 1.045

Density : 1.045 g/cm³

Solubility(ies) :

Media	Result
water	Soluble

Miscible with water : Yes.

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

Auto-ignition temperature :

Ingredient name	°C	°F	Method
Methanol	455	851	DIN 51794

Decomposition temperature : Not available.

Viscosity : Not available.

Particle characteristics

Median particle size : Not applicable.

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 : No specific data.

Incompatible materials : Reactive or incompatible with the following materials:
metals
Reactive or incompatible with the following materials: reducing materials.

Section 10. Stability and reactivity

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
Potassium hydroxide boric acid	LD50 Oral	Rat	273 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat - Male, Female	>2.12 mg/l	4 hours
3-Mercaptopropionic acid	LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-
	LC50 Inhalation Dusts and mists	Rat - Male, Female	1818 mg/m ³	4 hours
Methanol	LD50 Oral	Rat	96 mg/kg	-
	LC50 Inhalation Vapor	Rat	189.95 mg/l	1 hours
	LC50 Inhalation Vapor	Rat	145000 ppm	1 hours
	LC50 Inhalation Vapor	Rat	83.84 mg/l	4 hours
	LC50 Inhalation Vapor	Rat	64000 ppm	4 hours
	LD50 Dermal	Rabbit	15800 mg/kg	-
Phthalaldehyde	LD50 Oral	Rat	5600 mg/kg	-
	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	238.12 mg/kg	-
Potassium thiocyanate	LD50 Oral	Rat	854 mg/kg	-
	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
Dodecan-1-ol, ethoxylated	LD50 Oral	Rat - Female	1000 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Potassium hydroxide	Eyes - Moderate irritant	Rabbit	-	24 hours 1 mg	-
	Skin - Severe irritant	Guinea pig	-	24 hours 50 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 50 mg	-
Methanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	40 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-
Dodecan-1-ol, ethoxylated	Eyes - Severe irritant	Rabbit	-	24 hours 750 ug	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

Sensitization

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Classification

Section 11. Toxicological information

Product/ingredient name	IARC	NTP	ACGIH
boric acid	-	-	A4

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
Methanol	Category 1	-	central nervous system (CNS), optic nerve
Phthalaldehyde	Category 3	-	Respiratory tract irritation
Dodecan-1-ol, ethoxylated	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure : Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes severe burns. May cause an allergic skin reaction.
- Ingestion** : Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed.

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:
reduced fetal weight
increase in fetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced fetal weight
increase in fetal deaths
skeletal malformations

Section 11. Toxicological information

Ingestion : Adverse symptoms may include the following:
 stomach pains
 reduced fetal weight
 increase in fetal deaths
 skeletal malformations

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

General : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : May damage fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
OPA Reagent	1501.1	12231.3	N/A	150.0	56.6
Potassium hydroxide	273	N/A	N/A	N/A	N/A
boric acid	5100	N/A	N/A	N/A	N/A
3-Mercaptopropionic acid	96	N/A	N/A	N/A	1.818
Methanol	100	300	N/A	3	N/A
Phthalaldehyde	238.12	2500	N/A	N/A	N/A
Potassium thiocyanate	854	1100	N/A	N/A	1.5
Dodecan-1-ol, ethoxylated	1000	2500	N/A	N/A	N/A

Other information : Adverse symptoms may include the following: blurred or double vision, Eye contact can result in corneal damage or blindness. Repeated or prolonged exposure to the substance can produce liver damage. Narcotic effect. May cause nervous system disturbances.

Section 12. Ecological information

Toxicity

Section 12. Ecological information

Product/ingredient name	Result	Species	Exposure
Potassium hydroxide boric acid	Acute LC50 80 ppm Fresh water	Fish - <i>Gambusia affinis</i> - Adult	96 hours
	Acute LC50 45.5 mg/l Fresh water	Crustaceans - <i>Ceriodaphnia dubia</i>	48 hours
3-Mercaptopropionic acid	Acute LC50 133000 µg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 75 mg/l Marine water	Fish - <i>Pagrus major</i>	96 hours
	Chronic NOEC 6000 µg/l Fresh water	Daphnia - <i>Daphnia magna</i>	21 days
	Chronic NOEC 2100 µg/l Fresh water	Fish - <i>Oncorhynchus mykiss</i>	87 days
	Acute EC50 26 mg/l Fresh water	Algae	72 hours
	Acute EC50 9 mg/l Fresh water	Daphnia	48 hours
Methanol	Acute LC50 98 mg/l Fresh water	Fish	96 hours
	Acute NOEC 4.1 mg/l Fresh water	Algae	72 hours
	Acute EC50 2736 mg/l Marine water	Algae - <i>Ulva pertusa</i>	96 hours
	Acute LC50 2500000 µg/l Marine water	Crustaceans - <i>Crangon crangon</i> - Adult	48 hours
Phthalaldehyde	Acute LC50 3289 mg/l Fresh water	Daphnia - <i>Daphnia magna</i> - Neonate	48 hours
	Acute LC50 290 mg/l Fresh water	Fish - <i>Danio rerio</i> - Egg	96 hours
	Chronic NOEC 9.96 mg/l Marine water	Algae - <i>Ulva pertusa</i>	96 hours
	Acute EC50 90 ppb Fresh water	Daphnia - <i>Daphnia magna</i>	48 hours
Potassium thiocyanate	Acute LC50 20 ppb Fresh water	Fish - <i>Oncorhynchus mykiss</i>	96 hours
	Acute LC50 11000 µg/l Fresh water	Daphnia - <i>Daphnia pulex</i>	48 hours
	Acute LC50 20.8 mg/l Fresh water	Fish - <i>Oncorhynchus mykiss</i>	96 hours
Dodecan-1-ol, ethoxylated	Chronic NOEC 1100 µg/l Fresh water	Fish - <i>Lepomis macrochirus</i> - Juvenile (Fledgling, Hatchling, Weanling)	124 days
	Acute LC50 6460 µg/l Fresh water	Daphnia - <i>Daphnia magna</i>	48 hours
	Acute LC50 1500 µg/l Fresh water	Fish - <i>Salmo salar</i> - Parr	96 hours

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
3-Mercaptopropionic acid	301A Ready Biodegradability - DOC Die-Away Test	96 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
Boric acid	-	-	Not readily
3-Mercaptopropionic acid	-	-	Readily
Methanol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
Boric acid	-1.09	-	Low
3-Mercaptopropionic acid	-2.32	-	Low
Methanol	-0.77	<10	Low
Phthalaldehyde	0.99	-	Low
Potassium thiocyanate	-2.52	-	Low

Mobility in soil

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

Section 12. Ecological information

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

Section 14. Transport information

TDG / IMDG / IATA : Not regulated.

Additional information

Remarks: De minimis quantities

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

Transport in bulk according to IMO instruments	Proper shipping name	: Potassium hydroxide solution
	Remarks	: Liquid bulk cargoes Ship type: 3 Pollution category: Y

Section 15. Regulatory information

Canadian lists

Canadian NPRI : The following components are listed: methanol; Cyanides (ionic)

CEPA Toxic substances : None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

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

United States : All components are active or exempted.

Section 16. Other information

History

Date of issue/Date of revision : 05/08/2024

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Key to abbreviations

: ATE = Acute Toxicity Estimate
 BCF = Bioconcentration Factor
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals
 HPR = Hazardous Products Regulations
 IATA = International Air Transport Association
 IBC = Intermediate Bulk Container
 IMDG = International Maritime Dangerous Goods
 LogPow = logarithm of the octanol/water partition coefficient
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
 N/A = Not available
 UN = United Nations

Procedure used to derive the classification

Classification	Justification
CORROSIVE TO METALS - Category 1	Expert judgment
ACUTE TOXICITY (oral) - Category 4	Calculation method
SKIN CORROSION - Category 1A	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
SKIN SENSITIZATION - Category 1A	Calculation method
TOXIC TO REPRODUCTION - Category 1	Calculation method
Health Hazards Not Otherwise Classified - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

✔ Indicates information that has changed from previously issued version.

Notice to reader

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