

SAFETY DATA SHEET

According to US Regulation 29 CFR 1910.1200 (HazCom 2012)

1. Identification

Product identifier: Formaldehyde Solution

Other means of identification

Product No.: 2106, 2108, 2109, 5014, 5016

Recommended restrictions

Recommended use: For Laboratory, Research or Manufacturing Use.

Restrictions on use: Not determined.

Details of the supplier of the safety data sheet

Company Name: Avantor Performance Materials, LLC
Address: 100 Matsonford Rd, Suite 200
Radnor, PA 19087

Telephone: Customer Service: 855-282-6867

Contact Person: Product Information Compliance
E-mail: info@avantormaterials.com

Emergency telephone number:

CHEMTREC: 1-800-424-9300 within US and Canada (24 hrs/day, 7 days/week)

2. Hazard(s) identification

Hazard Classification

Physical Hazards

Flammable liquids Category 4

Health Hazards

Acute toxicity (Oral)	Category 3
Acute toxicity (Dermal)	Category 3
Acute toxicity (Inhalation - vapor)	Category 3
Skin Corrosion/Irritation	Category 1B
Serious Eye Damage/Eye Irritation	Category 1
Skin sensitizer	Category 1
Germ Cell Mutagenicity	Category 2
Carcinogenicity	Category 1A
Toxic to reproduction	Category 2
Specific Target Organ Toxicity - Single Exposure	Category 1 ¹
Specific Target Organ Toxicity - Repeated Exposure	Category 2 ²

Target Organs

1. Central nervous system, Eyes
2. Gastrointestinal tract, Kidney, Liver, Respiratory system, Skin

Unknown toxicity - Health

Acute toxicity, oral	0 %
Acute toxicity, dermal	32 %
Acute toxicity, inhalation, vapor	32 %
Acute toxicity, inhalation, dust or mist	47 %

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Combustible liquid.
Toxic if swallowed, in contact with skin or if inhaled.
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
Suspected of causing genetic defects.
May cause cancer.
Suspected of damaging fertility or the unborn child.
Causes damage to organs.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep container tightly closed. Ground and bond container and receiving equipment. Use explosion-proof [electrical/ventilating/lighting] equipment. Use non-sparking tools. Take action to prevent static discharges. Do not breathe dust/mist/vapors/spray. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

Response: IF exposed or concerned: Get medical advice/attention. IF SWALLOWED: Immediately call a POISON CENTER/doctor. Rinse mouth. Do NOT induce vomiting. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower]. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. In case of fire: Use water spray, foam, dry powder or carbon dioxide for extinction.

Storage: Store in a well-ventilated place. Keep cool. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Hazard(s) not otherwise classified (HNOC): None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Formaldehyde	50-00-0	36.50 - 38.00%
Methanol	67-56-1	10.00 - 15.00%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

General information: Get medical advice/attention if you feel unwell. Show this safety data sheet to the doctor in attendance.

Ingestion: Drink a few glasses of water or milk. Never give liquid to an unconscious person. Call a physician or poison control center immediately. Do not induce vomiting without advice from poison control center. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.

Inhalation: Move to fresh air. Call a physician or poison control center immediately. If breathing is difficult, give oxygen. If breathing stops, provide artificial respiration.

Skin Contact: Immediately remove contaminated clothing and shoes and wash skin with soap and plenty of water. Call a physician or poison control center immediately. If skin irritation or an allergic skin reaction develops, get medical attention. Wash contaminated clothing before reuse. Destroy or thoroughly clean contaminated shoes.

Eye contact: Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed

Symptoms: Causes severe skin and eye burns. Toxic if swallowed. May cause allergic skin reaction. Toxic in contact with skin. Harmful if inhaled.

Hazards: None known.

Indication of immediate medical attention and special treatment needed

Treatment: Treat symptomatically. Symptoms may be delayed.

5. Fire-fighting measures

General Fire Hazards: Flammable liquid and vapor.

Suitable (and unsuitable) extinguishing media

Suitable extinguishing media: Water spray, foam, dry powder or carbon dioxide.

Unsuitable extinguishing media: Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical: Vapors may cause a flash fire or ignite explosively. Vapors may travel considerable distance to a source of ignition and flash back. Prevent buildup of vapors or gases to explosive concentrations. Heat may cause the containers to explode.

Special protective equipment and precautions for firefighters

Special fire fighting procedures: Use water spray to keep fire-exposed containers cool. Water may be ineffective in fighting the fire. Fight fire from a protected location. Move containers from fire area if you can do so without risk.

Special protective equipment for fire-fighters: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures: ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area). Keep unauthorized personnel away. Keep upwind. Use personal protective equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. See Section 8 of the SDS for Personal Protective Equipment.

Methods and material for containment and cleaning up: In case of leakage, eliminate all ignition sources. Take precautionary measures against static discharges. Stop leak if possible without any risk. Use non-sparking tools. Absorb spill with vermiculite or other inert material, then place in a container for chemical waste. Clean surface thoroughly to remove residual contamination. Dike far ahead of larger spill for later recovery and disposal.

Notification Procedures: Prevent entry into waterways, sewer, basements or confined areas. Inform authorities if large amounts are involved.

Environmental Precautions: Do not contaminate water sources or sewer. Avoid discharge into drains, water courses or onto the ground. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling: DO NOT handle, store or open near an open flame, sources of heat or sources of ignition. Protect material from direct sunlight. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Take action to prevent static discharges. Ground and bond container and receiving equipment. Use explosion-proof ventilation equipment. Use non-sparking tools. Wear appropriate personal protective equipment. Do not get in eyes, on skin, on clothing. Do not taste or swallow. Do not breathe dust/fume/gas/mist/vapors/spray. Wash hands thoroughly after handling.

Conditions for safe storage, including any incompatibilities: Keep container tightly closed. Store in a cool, dry place with adequate ventilation. Keep away from incompatible materials, open flames, and high temperatures. Keep from freezing. Store between 15°C (59°F) and 30°C (86°F).

8. Exposure controls/personal protection

Control Parameters
Occupational Exposure Limits

Chemical Identity	Type	Exposure Limit Values	Source
Formaldehyde	STEL	0.3 ppm	US. ACGIH Threshold Limit Values (03 2017)
	TWA	0.1 ppm	US. ACGIH Threshold Limit Values (03 2017)
	REL	0.016 ppm	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Formaldehyde - as formaldehyde	REL	0.016 ppm	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Formaldehyde	Ceil_Time	0.1 ppm	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Formaldehyde - as formaldehyde	Ceil_Time	0.1 ppm	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
Formaldehyde	REF	29 CFR 1910.1048	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (03 2012)
	TWA	0.75 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	STEL	2 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	OSHA_ACT	0.5 ppm	US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1053) (02 2006)
	TWA	0.75 ppm	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	2 ppm	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	AN ESL	Health 6.6 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	STEL	2 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA PEL	0.75 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	TWA A LV	0.5 ppm	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (08 2010)
	STEL	2 ppm	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (01 2019)
	TWA	0.75 ppm	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (01 2019)
	AN ESL	Health 2.7 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	AN ESL	Health 3.3 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	ST ESL	Health 15 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	ST ESL	Health 12 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	ST ESL	Health 30 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
Methanol	TWA	200 ppm	US. ACGIH Threshold Limit Values (2011)
	STEL	250 ppm	US. ACGIH Threshold Limit Values (2011)
	SKIN_DES	Can be absorbed through the skin.	US. ACGIH Threshold Limit Values (2011)
	STEL	325 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	SKIN_DES	Can be absorbed through the skin.	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	REL	260 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2010)
	PEL	260 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
	TWA	260 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	325 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	SKIN_FINA	Can be absorbed	US. OSHA Table Z-1-A (29 CFR 1910.1000)

	L	through the skin.	(1989)
	AN ESL	Health 2,100 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	AN ESL	Health 1,600 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	ST ESL	Health 3,900 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	ST ESL	Health 3,000 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (06 2018)
	STEL	250 ppm 325 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (01 2019)

Biological Limit Values

Chemical Identity	Exposure Limit Values	Source
Methanol (methanol: Sampling time: End of shift.)	15 mg/l (Urine)	ACGIH BEL (03 2013)

Appropriate Engineering Controls No data available.

Individual protection measures, such as personal protective equipment

General information: Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. An eye wash and safety shower must be available in the immediate work area.

Eye/face protection: Wear safety glasses with side shields (or goggles) and a face shield. Wear a full-face respirator, if needed.

Skin Protection
Hand Protection: Chemical resistant gloves

Other: Wear suitable protective clothing.

Respiratory Protection: In case of inadequate ventilation use suitable respirator. Respirator type: Chemical respirator with organic vapor cartridge and full facepiece.

Hygiene measures: Provide eyewash station and safety shower. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Do not get this material in contact with skin. Do not get in eyes. Contaminated work clothing should not be allowed out of the workplace.

9. Physical and chemical properties

Appearance

Physical state: Liquid
Form: Liquid
Color: Colorless
Odor: Pungent
Odor threshold: No data available.
pH: 3.0 - 4.5 (20 °C)
Melting point/freezing point: -15 °C

Initial boiling point and boiling range:	100 °C
Flash Point:	62 °C
Evaporation rate:	1 (butyl acetate=1)
Flammability (solid, gas):	Class IIIA Combustible Liquid
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	70 %(V)
Flammability limit - lower (%):	7.0 %(V)
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	5.33 kPa
Vapor density:	Approximate 1 (Air=1)
Density:	1.08 g/ml (20 °C)
Relative density:	1.08 (20 °C)
Solubility(ies)	
Solubility in water:	Completely soluble
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	420 °C
Decomposition temperature:	No data available.
Viscosity:	No data available.
Other information	
Explosive properties:	Not explosive.
Oxidizing properties:	Not an oxidizer.

10. Stability and reactivity

Reactivity:	No dangerous reaction known under conditions of normal use.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	Hazardous polymerization does not occur.
Conditions to avoid:	Heat, sparks, flames. Sunlight. Contact with incompatible materials.
Incompatible Materials:	Strong oxidizing agents. Alkalies. Acids. Phenols.
Hazardous Decomposition Products:	Thermal decomposition may release oxides of carbon.

11. Toxicological information

Information on likely routes of exposure

Inhalation:	Toxic by inhalation. Irritating to respiratory tract.
Skin Contact:	Toxic in contact with skin. Causes severe skin burns. May cause an allergic skin reaction.
Eye contact:	Causes serious eye damage.
Ingestion:	Toxic if swallowed. May cause burns of the gastrointestinal tract if swallowed.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral

Product: ATEmix (Rat): 192.31 mg/kg

Dermal

Product: ATEmix (Rabbit) 576.92 mg/kg

Inhalation

Product: ATEmix (Rat, 4 h) 2.84 mg/l Vapour

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: Causes severe skin burns.

Serious Eye Damage/Eye Irritation

Product: Causes serious eye damage.

Respiratory or Skin Sensitization

Product: May cause an allergic skin reaction.

Carcinogenicity

Product: May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Formaldehyde Overall evaluation: 1. Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

Formaldehyde Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

Formaldehyde
Cancer

Germ Cell Mutagenicity

In vitro

Product: Suspected of causing genetic defects.

In vivo

Product: Suspected of causing genetic defects.

Reproductive toxicity

Product: Suspected of damaging fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Product: Central nervous system., Eyes.

Specific Target Organ Toxicity - Repeated Exposure

Product: Gastrointestinal System, Kidney, Liver, Respiratory system, Skin

Target Organs

Specific Target Organ Toxicity - Single Exposure: Central nervous system, Eyes

Specific Target Organ Toxicity - Repeated Exposure: Gastrointestinal tract, Kidney, Liver, Respiratory system, Skin

Aspiration Hazard

Product: Not classified

Other effects:

Even small amounts (30-250 ml methanol) may be fatal. Symptoms are stomach ache, nausea, vomiting, dullness, visual disorder and blindness.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Formaldehyde LC 50 (Fathead minnow (Pimephales promelas), 96 h): 22.61 - 27.2 mg/l
LC 50 (Bluegill (Lepomis macrochirus), 96 h): 25.4 - 34 mg/l
LC 50 (Oncorhynchus mykiss, 96 h): 61.9 - 118 mg/l
LC 50 (Danio rerio, 96 h): 41 mg/l

Methanol LC 50 (Bluegill (Lepomis macrochirus), 96 h): 15,400 mg/l
LC 50 (Rainbow trout,donaldson trout (Oncorhynchus mykiss), 96 h): 19,500 - 20,700 mg/l
LC 50 (Fathead minnow (Pimephales promelas), 96 h): 28,500 - 30,400 mg/l

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Formaldehyde EC 50 (Daphnia magna, 48 h): 29 mg/l
EC 50 (Ceriodaphnia dubia, 48 h): 12.98 mg/l

Methanol LC 50 (Cockle (Cerastoderma edule), 48 h): 1,000 mg/l
EC 50 (Water flea (Daphnia obtusa), 48 h): 21,100 - 23,400 mg/l
LC 50 (Water flea (Daphnia magna), 48 h): 2,461 - 4,395 mg/l

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: There are no data on the degradability of this product.

BOD/COD Ratio

Product: No data available.

Bioaccumulative potential

Bioconcentration Factor (BCF)

Product: No data available on bioaccumulation.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Specified substance(s):

Formaldehyde Log Kow: 0.35

Methanol Log Kow: -0.77

Mobility in soil: The product is water soluble and may spread in water systems.

Other adverse effects: Harmful to aquatic organisms.

13. Disposal considerations

Disposal instructions: Discharge, treatment, or disposal may be subject to national, state, or local laws. Do not allow to enter drains, sewers or watercourses.

Contaminated Packaging: Since emptied containers retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN Number: UN 2209
 UN Proper Shipping Name: Formaldehyde solutions
 Transport Hazard Class(es)
 Class: 8
 Label(s): 8
 Packing Group: III
 Marine Pollutant: No
 Special precautions for user: Not determined.

IMDG

UN Number: UN 2209
 UN Proper Shipping Name: FORMALDEHYDE SOLUTION
 Transport Hazard Class(es)
 Class: 8
 Label(s): 8
 EmS No.: F-A, S-B
 Packing Group: III
 Marine Pollutant: No
 Special precautions for user: Not determined.

IATA

UN Number: UN 2209
 Proper Shipping Name: Formaldehyde solution
 Transport Hazard Class(es):
 Class: 8
 Label(s): 8
 Packing Group: III
 Marine Pollutant: No
 Special precautions for user: Not determined.

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

<u>Chemical Identity</u>	<u>OSHA hazard(s)</u>
Formaldehyde	Acute toxicity Skin irritation Skin sensitization Flammability respiratory tract irritation Respiratory sensitization Cancer Eye irritation

CERCLA Hazardous Substance List (40 CFR 302.4):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Formaldehyde	100 lbs.
Methanol	5000 lbs.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

- Flammable (gases, aerosols, liquids, or solids)
- Acute toxicity (any route of exposure)
- Skin Corrosion or Irritation
- Serious eye damage or eye irritation
- Respiratory or Skin Sensitization
- Germ Cell Mutagenicity
- Carcinogenicity
- Reproductive toxicity
- Specific target organ toxicity (single or repeated exposure)

SARA 302 Extremely Hazardous Substance

<u>Chemical Identity</u>	<u>Reportable quantity</u>	<u>Threshold Planning Quantity</u>
Formaldehyde	100 lbs.	500 lbs.

SARA 304 Emergency Release Notification

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Formaldehyde	100 lbs.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Formaldehyde	500 lbs.
Methanol	10000 lbs.

SARA 313 (TRI Reporting)

<u>Chemical Identity</u>	<u>Reporting threshold for other users</u>	<u>Reporting threshold for manufacturing and processing</u>
Formaldehyde	10000 lbs.	25000 lbs.
Methanol	10000 lbs.	25000 lbs.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
SDS_US - SDSMIX000561	

Formaldehyde 15000 lbs.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3):

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Formaldehyde	Reportable quantity: 100 lbs.

US State Regulations

US. California Proposition 65

WARNING: This product contains a chemical known to the State of California to cause cancer.
Formaldehyde Carcinogenic.

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

Methanol Developmental toxin.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity

Formaldehyde
Methanol

US. Massachusetts RTK - Substance List

Chemical Identity

Formaldehyde
Methanol

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity

Formaldehyde
Methanol

US. Rhode Island RTK

Chemical Identity

Formaldehyde
Methanol

International regulations

Montreal protocol

Not applicable

Stockholm convention

Not applicable

Rotterdam convention

Not applicable

Kyoto protocol

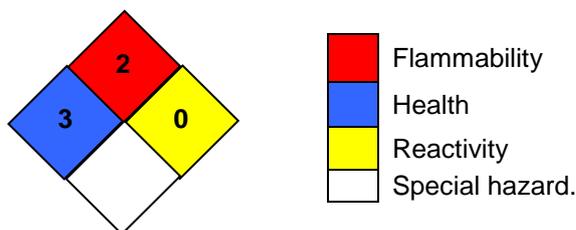
Not applicable

Inventory Status:

Australia AICS:	On or in compliance with the inventory
Canada DSL Inventory List:	On or in compliance with the inventory
China Inv. Existing Chemical Substances:	On or in compliance with the inventory
Japan (ENCS) List:	On or in compliance with the inventory
Japan ISHL Listing:	Not in compliance with the inventory.
Korea Existing Chemicals Inv. (KECI):	On or in compliance with the inventory
Mexico INSQ:	On or in compliance with the inventory
New Zealand Inventory of Chemicals:	On or in compliance with the inventory
Philippines PICCS:	On or in compliance with the inventory
Taiwan Chemical Substance Inventory:	On or in compliance with the inventory
US TSCA Inventory:	On or in compliance with the inventory
EINECS, ELINCS or NLP:	On or in compliance with the inventory

16. Other information, including date of preparation or last revision

NFPA Hazard ID



Hazard rating: 0 - Minimal; 1 - Slight; 2 - Moderate; 3 - Serious; 4 - Severe; RNP - Rating not possible

Issue Date:	09-17-2020
Revision Information:	Not relevant.
Version #:	2.0
Source of information:	Sources of information used in preparing this SDS included one or more of the following: results from in house or supplier toxicology studies, information from the Toxicology Data Network (TOXNET), European Chemical Agency (ECHA) substance dossiers, IARC Monographs, US National Toxicology Program data, the Agency for Toxic Substances and Disease Registry, other manufacturer's SDSs and other sources, as appropriate.
Further Information:	No data available.

Disclaimer:

The information provided in this Safety Data Sheet (SDS) was prepared based on data believed to be accurate as of the date of this SDS. TO THE GREATEST EXTENT PERMITTED BY LAW, AVANTOR PERFORMANCE MATERIALS ("AVANTOR") EXPRESSLY DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES REGARDING THE INFORMATION CONTAINED HEREIN INCLUDING, WITHOUT LIMITATION, AS TO ACCURACY, COMPLETENESS, FITNESS FOR PURPOSE OR USE, MERCHANTABILITY, NON-INFRINGEMENT, PERFORMANCE, SAFETY, SUITABILITY AND STABILITY. This SDS is intended as a guide to the appropriate use, handling, storage and disposal of the product to which it relates by properly trained personnel, and is not intended to be comprehensive. Users of Avantor's products are advised to perform their own tests and to exercise their own judgment to determine the safety, suitability and appropriate use, handling, storage and disposal of each product and product combination for their own purposes and uses. TO THE GREATEST EXTENT PERMITTED BY LAW, AVANTOR DISCLAIMS LIABILITY FOR, AND BY USING AVANTOR'S PRODUCTS PURCHASER AGREES THAT UNDER NO CIRCUMSTANCES SHALL AVANTOR BE LIABLE FOR, SPECIAL, INDIRECT, INCIDENTAL, PUNITIVE OR CONSEQUENTIAL DAMAGES OF ANY TYPE OR KIND, INCLUDING WITHOUT LIMITATION, FOR LOSS OF PROFITS, REPUTATIONAL DAMAGE, PRODUCT RECALL OR BUSINESS INTERRUPTION.