

SAFETY DATA SHEET

according to the OSHA
Hazard Communication Standard

Version 8.13
Revision Date 05/30/2026
Print Date 05/31/2026

SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : Formalin solution, neutral buffered, 10%

Product Number : HT5012

Brand : Sigma

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

Identified uses : Laboratory chemicals, Synthesis of substances

Uses advised against : The product is being supplied under the TSCA R&D Exemption (40 CFR Section 720.36). It is the recipient's responsibility to comply with the requirements of the R&D exemption. The product may not be used for a non-exempt commercial purpose under TSCA unless appropriate consent is granted in writing by MilliporeSigma.

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich Inc.
3050 SPRUCE ST
ST. LOUIS MO 63103
UNITED STATES

Telephone : +1 314 771-5765

Fax : +1 800 325-5052

1.4 Emergency telephone number

Emergency Phone # : 800-424-9300 CHEMTREC (USA) +1-703-
527-3887 CHEMTREC (International) 24
Hours/day; 7 Days/week

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards for the product as supplied

Flammable liquids : Category 4

Acute toxicity (Inhalation) : Category 4

Skin irritation : Category 2

Serious eye damage : Category 1

Skin sensitisation : Category 1

Germ cell mutagenicity : Category 2

Carcinogenicity : Category 1B

Short-term (acute) aquatic hazard : Category 3

Other hazards

None known.

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H227 Combustible liquid.
 H315 Causes skin irritation.
 H317 May cause an allergic skin reaction.
 H318 Causes serious eye damage.
 H332 Harmful if inhaled.
 H341 Suspected of causing genetic defects.
 H350 May cause cancer.
 H402 Harmful to aquatic life.

Supplemental Hazard Statements : Corrosive to the respiratory tract.

Precautionary statements : **Prevention:**
 P201 Obtain special instructions before use.
 P202 Do not handle until all safety precautions have been read and understood.
 P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P261 Avoid breathing mist or vapours.
 P264 Wash skin thoroughly after handling.
 P271 Use only outdoors or in a well-ventilated area.
 P272 Contaminated work clothing must not be allowed out of the workplace.

P273 Avoid release to the environment.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of water.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.

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/ doctor.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

Storage:

P403 Store in a well-ventilated place.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

CAS-No. : Not Assigned

Components

| Chemical name | CAS No./Unique ID | Concentration (% w/w) | Trade secret |
|---------------|-------------------|-----------------------|--------------|
| formaldehyde | 50-00-0* | >= 1 - <= 5 | TSC |
| Methanol | 67-56-1* | >= 0.5 - <= 1.5 | TSC |

* Indicates that the identifier is a CAS No.

TSC- the actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

General advice : Show this safety data sheet to the doctor in attendance.

| | |
|---|--|
| If inhaled | : After inhalation: fresh air. Immediately call in physician. If breathing stops: immediately apply artificial respiration, if necessary also oxygen. |
| In case of skin contact | : In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician. |
| In case of eye contact | : After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses. |
| If swallowed | : After swallowing: immediately make victim drink water (two glasses at most). Consult a physician. |
| Most important symptoms and effects, both acute and delayed | : The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11 |
| Protection of first-aiders | : For personal protection see section 8. |
| Notes to physician | : No data available |

SECTION 5. FIREFIGHTING MEASURES

| | |
|---------------------------------------|---|
| Suitable extinguishing media | : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Unsuitable extinguishing media | : For this substance/mixture no limitations of extinguishing agents are given. |
| Specific hazards during fire fighting | : Not combustible. |

Vapours are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Ambient fire may liberate hazardous vapours.

| | |
|--|---|
| Hazardous combustion products | : Carbon oxides |
| Specific extinguishing methods | : No data available |
| Further information | : Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system. |
| Special protective equipment for fire-fighters | : Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

| | |
|---|--|
| Personal precautions, protective equipment and emergency procedures | : Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert. Advice for emergency responders: For personal protection see section 8. |
| Environmental precautions | : Do not let product enter drains. |
| Methods and materials for containment and cleaning up | : Cover drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area. |

SECTION 7. HANDLING AND STORAGE

For precautions see section 2.2.

| | |
|---|--|
| Advice on protection against fire and explosion | : Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge. |
| Advice on safe handling | : Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols. |

Further information on storage conditions : Tightly closed.
Keep in a well-ventilated place.
Keep locked up or in an area accessible only to qualified or authorised persons.

Storage class : 6.1C, Combustible, acute toxic Cat.3 / toxic compounds or compounds which causing chronic effects

Recommended storage temperature : Recommended storage temperature see product label.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

| Components | CAS-No. | Value type (Form of exposure) | Control parameters / Permissible concentration | Basis |
|--------------|---------|-------------------------------|--|-----------|
| formaldehyde | 50-00-0 | TWA | 0.1 ppm | ACGIH |
| | | STEL | 0.3 ppm | ACGIH |
| | | TWA | 0.016 ppm | NIOSH REL |
| | | C | 0.1 ppm | NIOSH REL |
| | | PEL | 0.75 ppm | OSHA CARC |
| | | STEL | 2 ppm | OSHA CARC |
| | | TWA | 0.016 ppm (Formaldehyde) | NIOSH REL |
| | | C | 0.1 ppm (Formaldehyde) | NIOSH REL |
| Methanol | 67-56-1 | TWA | 200 ppm | ACGIH |
| | | STEL | 250 ppm | ACGIH |
| | | ST | 250 ppm 325 mg/m ³ | NIOSH REL |
| | | TWA | 200 ppm 260 mg/m ³ | NIOSH REL |
| | | TWA | 200 ppm 260 mg/m ³ | OSHA Z-1 |

Biological occupational exposure limits

| Components | CAS-No. | Control parameters | Biological specimen | Sampling time | Permissible concentration | Basis |
|------------|---------|--------------------|---------------------|--------------------------|---------------------------|-----------|
| Methanol | 67-56-1 | Methanol | Urine | End of shift (As soon as | 15 mg/l | ACGIH BEI |

| | | | | | | |
|--|--|--|--|--|--|--|
| | | | | possible after exposur e ceases) | | |
|--|--|--|--|--|--|--|

Engineering measures : No data available

Personal protective equipment

Respiratory protection : required when vapours/aerosols are generated.

Our recommendations on filtering respiratory protection are based on the following standards: DIN EN 143, DIN 14387 and other accompanying standards relating to the used respiratory protection system.

Recommended Filter type: : Filter type ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Hand protection

Material : Nitrile rubber
 Break through time : 480 min
 Glove thickness : 0.11 mm
 Protective index : Full contact
 Manufacturer : Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Material : Nitrile rubber
 Break through time : 480 min
 Glove thickness : 0.11 mm
 Protective index : Splash contact
 Manufacturer : Dermatrill® (KCL 740 / Aldrich Z677272, Size M)

Manufacturer : data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

Remarks : Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good

laboratory practices. Wash and dry hands.
If used in solution, or mixed with other substances,
and under conditions which differ from EN 374,
contact the supplier of the CE approved gloves. This
recommendation is advisory only and must be
evaluated by an industrial hygienist and safety officer
familiar with the specific situation of anticipated use
by our customers. It should not be construed as
offering an approval for any specific use scenario.

- Eye protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Safety glasses
- Skin and body protection : protective clothing
- Hygiene measures : Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Color : colourless
- Odor : No data available
- Odor Threshold : No data available
pH : 6.9 - 7.1
- Melting point : No data available
- Boiling point/boiling range : 212 °F / 100 °C (1,013 hPa)
- Flash point : 185 °F / 85 °C
Not applicable
- Evaporation rate : No data available
- Flammability (solid, gas) : No data available
- Flammability (liquids) : The product is not flammable.
- Burning rate : No data available

| | |
|---|---|
| Self-ignition | : Not applicable |
| Upper explosion limit / Upper flammability limit | : Upper flammability limit 70 %(V) Not applicable |
| Lower explosion limit / Lower flammability limit | : Lower flammability limit 7 %(V) Not applicable |
| Vapor pressure | : 53 hPa (102 °F / 39 °C) |
| Relative vapour density | : No data available |
| Relative density | : No data available |
| Density | : 1.080 g/cm ³ |
| Solubility(ies) Water solubility | : completely miscible soluble (68 °F / 20 °C) |
| Partition coefficient: n- octanol/water | : No data available |
| Autoignition temperature | : Not applicable |
| Decomposition temperature | : No data available |
| Viscosity, dynamic | : No data available |
| Viscosity, kinematic | : No data available |
| Flow time | : No data available |
| Explosive properties | : Not classified as explosive. |
| Oxidizing properties | : none |
| Particle characteristics | |

SECTION 10. STABILITY AND REACTIVITY

| | |
|------------|---|
| Reactivity | : Forms explosive mixtures with air on intense heating. A range from approx. 15 Kelvin below the flash point is to be rated as critical. |
|------------|---|

| | |
|------------------------------------|--|
| Chemical stability | : The product is chemically stable under standard ambient conditions (room temperature) . |
| Possibility of hazardous reactions | : Violent reactions possible with: The generally known reaction partners of water. |
| Conditions to avoid | : Strong heating. |
| Incompatible materials | : Strong bases Acids Oxidizing agents Alkali metals Strong oxidizing agents Amines Strong acids Acid chlorides Acid anhydrides Reducing agents Peroxides Isocyanates Phenol Aniline |
| Hazardous decomposition products | : In the event of fire: see section 5 |

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Mixture

Acute toxicity

Oral: No data available

Acute toxicity estimate Oral - > 5,000 mg/kg
(Calculation method)

Inhalation: No data available

Acute toxicity estimate Inhalation - 4 h - 12.58 mg/l - vapour(Calculation method)

Dermal: No data available

Acute toxicity estimate Dermal - > 5,000 mg/kg
(Calculation method)

Skin corrosion/irritation

Remarks: Mixture causes skin irritation.

Serious eye damage/eye irritation

Remarks: Mixture causes serious eye damage.

Respiratory or skin sensitization

Mixture may cause an allergic skin reaction.

Germ cell mutagenicity

Evidence of genetic defects.

Carcinogenicity

Possible carcinogen.

IARC: 1 - Group 1: Carcinogenic to humans (formaldehyde)

NTP: Known - Known to be human carcinogen (formaldehyde)

OSHA: OSHA specifically regulated carcinogen (formaldehyde)

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

11.2 Additional Information

Methyl alcohol may be fatal or cause blindness if swallowed., Cannot be made non-poisonous., Effects due to ingestion may include:, Nausea, Dizziness, Gastrointestinal disturbance, Weakness, Confusion., Drowsiness, Unconsciousness, May cause convulsions. Other dangerous properties can not be excluded.

This substance should be handled with particular care.

Handle in accordance with good industrial hygiene and safety practice.

Liver - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

Components**formaldehyde****Acute toxicity**

LD50 Oral - Rat - male - 640 mg/kg

(OECD Test Guideline 401)

LD50 Oral - Rat - male - 550 mg/kg

(OECD Test Guideline 401)

Acute toxicity estimate Inhalation - 4 h - 0.51 mg/l - vapour

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Inhalation: Corrosive to respiratory system.

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: Causes burns. - 20 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation

Remarks: Causes serious eye damage.

Respiratory or skin sensitization

Maximisation Test - Guinea pig

Result: positive
(OECD Test Guideline 406)

Germ cell mutagenicity

Suspected of causing genetic defects.

Carcinogenicity

Presumed to have carcinogenic potential for humans

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause respiratory irritation.

Specific target organ toxicity - repeated exposure**Aspiration hazard**

No data available

Methanol**Acute toxicity**

Acute toxicity estimate Oral - 100.1 mg/kg

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Symptoms: Nausea, Vomiting

Acute toxicity estimate Inhalation - 4 h - 3.1 mg/l - vapour

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Symptoms: Irritation symptoms in the respiratory tract.

Acute toxicity estimate Dermal - 300.1 mg/kg

(Expert judgement)

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

Remarks: (ECHA)

Remarks: Drying-out effect resulting in rough and chapped skin.

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

Remarks: (ECHA)

Respiratory or skin sensitization

Sensitisation test: - Guinea pig

Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity

Based on available data the classification criteria are not met.

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster lung cells

Result: negative

Method: OECD Test Guideline 474

Species: Mouse - male and female - Bone marrow

Result: negative

Carcinogenicity

Did not show carcinogenic effects in animal experiments.

Reproductive toxicity

Based on available data the classification criteria are not met.

Specific target organ toxicity - single exposure

Causes damage to organs. - Eyes, Central nervous system

Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Acute oral toxicity - Nausea, Vomiting

Acute inhalation toxicity - Irritation symptoms in the respiratory tract.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

SECTION 12. ECOLOGICAL INFORMATION**Ecotoxicity****Components:****formaldehyde:**

Toxicity to fish : LC50 (Morone saxatilis): 6.7 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Remarks: (ECHA)

- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia pulex* (Water flea)): 5.8 mg/l
 End point: Immobilization
 Exposure time: 48 h
 Test Type: static test
 Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : ErC50 (*Desmodesmus subspicatus* (green algae)): 4.89 mg/l
 Exposure time: 72 h
 Test Type: static test
 Method: OECD Test Guideline 201
- Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): ≥ 6.4 mg/l
 End point: reproduction rate
 Exposure time: 21 d
 Test Type: semi-static test
 Analytical monitoring: yes
 Method: OECD Test Guideline 211
 GLP: yes
- Toxicity to microorganisms : EC50 (activated sludge): 19 mg/l
 Exposure time: 3 h
 Test Type: static test
 Method: OECD Test Guideline 209

Methanol:

- Toxicity to fish : LC50 (*Lepomis macrochirus* (Bluegill)): 15,400.0 mg/l
 End point: mortality
 Exposure time: 96 h
 Test Type: flow-through test
 Analytical monitoring: yes
 Method: US-EPA
- Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 18,260 mg/l
 End point: Immobilization
 Exposure time: 96 h
 Test Type: semi-static test
 Method: OECD Test Guideline 202
- Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): ca. 22,000.0 mg/l
 Exposure time: 96 h
 Test Type: static test
 Method: OECD Test Guideline 201
- Toxicity to fish (Chronic toxicity) : NOEC (*Oryzias latipes* (Orange-red killifish)): 7,900 mg/l
 Exposure time: 200 h
 Remarks: (External MSDS)
- Toxicity to : IC50 (activated sludge): $> 1,000$ mg/l

microorganisms Exposure time: 3 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 209

Persistence and degradability

Components:

formaldehyde:

Biodegradability : aerobic
Inoculum: Sewage sludge
Concentration: 10 mg/l
Dissolved organic carbon (DOC)
Result: Readily biodegradable.
Biodegradation: 99 %
Exposure time: 28 d
Method: OECD Test Guideline 301A
GLP: yes

BOD/COD : BOD/COD: 0.74 %

Methanol:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 99 %
Exposure time: 30 d
Method: OECD Test Guideline 301D

Biochemical Oxygen Demand (BOD) : 600 - 1,120 mg/g
Incubation time: 5 d
Remarks: (IUCLID)

Chemical Oxygen Demand (COD) : 1,420 mg/g
Remarks: (IUCLID)

ThOD : 1,500 mg/g
Remarks: (Lit.)

BOD/ThOD : 76 %
Remarks: Closed Bottle test
(IUCLID)

Stability in water : Hydrolysis: 83 - 91 % at 19 °C(72 h)
Remarks: Hydrolyses on contact with water.
Hydrolyses readily.

Degradation half life: 2.2 yr
Remarks: reaction with hydroxyl radicals
(IUCLID)

Photodegradation : Degradation (direct photolysis): 50 % Degradation

half life: 17.2 d

Bioaccumulative potential

Components:

formaldehyde:

Partition coefficient: n-octanol/water : log Pow: 0.021
Remarks: (Lit.)
Bioaccumulation is not expected.

Methanol:

Bioaccumulation : Species: Cyprinus carpio (Carp)
Bioconcentration factor (BCF): 1.0
Exposure time: 72 d
Temperature: 68 °F / 20 °C
Concentration: 5 mg/l

Partition coefficient: n-octanol/water : log Pow: -0.77 (77 °F / 25 °C)
Method: (experimental)
Remarks: (HSDB)
Bioaccumulation is not expected.

Mobility in soil

Components:

Methanol:

Stability in soil : Remarks: Will not adsorb on soil.

Other adverse effects

Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Components:

formaldehyde:

Results of PBT and vPvB assessment : Substance does not meet the criteria for PBT or vPvB according to Regulation (EC) No 1907/2006, Annex XIII.

Methanol:

Results of PBT and vPvB : Not persistent, bioaccumulative, and toxic (PBT).

assessment

Additional ecological information : Avoid release to the environment.

Endocrine disrupting properties

No data available

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues : Waste material must be disposed of in accordance with the national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

SECTION 14. TRANSPORT INFORMATION

International Regulations

IATA-DGR

Not regulated as a dangerous good

IMDG-Code

Not regulated as a dangerous good

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number : NA 1993
Proper shipping name : Combustible liquid, n.o.s.
(Sodium dihydrogenorthophosphate monohydrate,
Methanol, formaldehyde)
Class : Combustible liquid.
Packing group : III
Labels : None
ERG Code : 128
Marine pollutant : no
Poison Inhalation Hazard : No

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|--------------|---------|--------------------|-----------------------------|
| formaldehyde | 50-00-0 | 100 | 2597 |

SARA 304 Extremely Hazardous Substances Reportable Quantity

| Components | CAS-No. | Component RQ (lbs) | Calculated product RQ (lbs) |
|--------------|---------|--------------------|-----------------------------|
| formaldehyde | 50-00-0 | 100 | 2597 |

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

| Components | CAS-No. | Component TPQ (lbs) |
|--------------|---------|---------------------|
| formaldehyde | 50-00-0 | 500 |

SARA 311/312 Hazards : Fire Hazard
Acute Health Hazard
Chronic Health Hazard

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

| | | |
|--------------|---------|--------------|
| formaldehyde | 50-00-0 | >= 1 - < 5 % |
| Methanol | 67-56-1 | >= 1 - < 5 % |

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 112 (40 CFR 61):

| | | |
|--------------|---------|--------------|
| formaldehyde | 50-00-0 | >= 1 - < 5 % |
| Methanol | 67-56-1 | >= 1 - < 5 % |

The following chemical(s) are listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F):

| | | |
|--------------|---------|--------------|
| formaldehyde | 50-00-0 | >= 1 - < 5 % |
|--------------|---------|--------------|

The following chemical(s) are listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489):

| | | |
|--------------|---------|--------------|
| formaldehyde | 50-00-0 | >= 1 - < 5 % |
| Methanol | 67-56-1 | >= 1 - < 5 % |

Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

| | | |
|----------------------------------|-----------|----------------|
| formaldehyde | 50-00-0 | >= 1 - < 5 % |
| disodium hydrogen orthophosphate | 7558-79-4 | >= 0.1 - < 1 % |

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

| | | |
|--------------|---------|--------------|
| formaldehyde | 50-00-0 | >= 1 - < 5 % |
|--------------|---------|--------------|

disodium hydrogen 7558-79-4 $\geq 0.1 - < 1 \%$
orthophosphate

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

formaldehyde 50-00-0
Methanol 67-56-1

Pennsylvania Right To Know

formaldehyde 50-00-0
Methanol 67-56-1
disodium hydrogen orthophosphate 7558-79-4

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

formaldehyde 50-00-0

Washington Chemicals of High Concern

formaldehyde 50-00-0

California Prop. 65

WARNING: This product can expose you to chemicals including formaldehyde, which is/are known to the State of California to cause cancer, and Methanol, which is/are known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov. **The components of this product are reported in the following inventories:**

US TSCA : All substances listed as active on the TSCA inventory

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

SECTION 16. OTHER INFORMATION

Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)
ACGIH BEI : ACGIH - Biological Exposure Indices (BEI)
NIOSH REL : USA. NIOSH Recommended Exposure Limits
OSHA CARC : OSHA Specifically Regulated Chemicals/Carcinogens
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA : 8-hour, time-weighted average
ACGIH / STEL : Short-term exposure limit
NIOSH REL / TWA : Time-weighted average concentration for up to a 10-

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hour workday during a 40-hour workweek
 NIOSH REL / ST : STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
 NIOSH REL / C : Ceiling value not be exceeded at any time.
 OSHA CARC / PEL : Permissible exposure limit (PEL)
 OSHA CARC / STEL : Excursion limit
 OSHA Z-1 / TWA : 8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonised System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organisation; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardisation; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organisation for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

The information is believed to be correct but is not exhaustive and will be used solely as a guideline, which is based on current knowledge of the chemical substance or mixture and is applicable to appropriate safety precautions for the product. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Corporation and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.sigma-aldrich.com and/or the reverse side of invoice or packing slip for additional terms and conditions of sale.

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The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the US and Canada

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