





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

### 3. Composition/information on ingredients

#### Mixtures

Chemical Identity	CAS number	Content in percent (%)*
2,4-Pentanediol, 2-methyl-	107-41-5	0.1 - <1%

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

### 4. First-aid measures

**Ingestion:** Rinse mouth thoroughly.

**Inhalation:** Move to fresh air.

**Skin Contact:** Remove contaminated clothing and wash the skin thoroughly with soap and water after work.

**Eye contact:** Rinse immediately with plenty of water.

#### Most important symptoms/effects, acute and delayed

**Symptoms:** No data available.

**Hazards:** No data available.

#### Indication of immediate medical attention and special treatment needed

**Treatment:** No data available.

### 5. Fire-fighting measures

**General Fire Hazards:** Use water spray to keep fire-exposed containers cool. Fight fire from a protected location. Stop flow of gas. Move containers from fire area if you can do so without risk.

#### Suitable (and unsuitable) extinguishing media

**Suitable extinguishing media:** Use fire-extinguishing media appropriate for surrounding materials.

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

**Specific hazards arising from the chemical:** Pressurized container may explode when exposed to heat or flame.

#### Special protective equipment and precautions for firefighters

**Special fire fighting procedures:** No data available.



**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.

**6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures:** No data available.

**Methods and material for containment and cleaning up:** Stop the flow of material, if this is without risk. Absorb with sand or other inert absorbent.

**Environmental Precautions:** Avoid release to the environment. Prevent further leakage or spillage if safe to do so. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages.

**7. Handling and storage**

**Precautions for safe handling:** Provide adequate ventilation. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

**Conditions for safe storage, including any incompatibilities:** Protect from sunlight. Store in a cool place. Aerosol Level 1

**8. Exposure controls/personal protection**

**Control Parameters**

**Occupational Exposure Limits**

Chemical Identity	Type	Exposure Limit Values	Source
2,4-Pentanediol, 2-methyl-	Ceil_Time	25 ppm 125 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	Ceiling	25 ppm 125 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	Ceiling	25 ppm 125 mg/m3	US. Tennessee. OELs. Occupational Exposure Limits, Table Z1A (06 2008)
	Ceiling	25 ppm 125 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
2,4-Pentanediol, 2-methyl- - Aerosol, inhalable.	AN ESL	120 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	25 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	ST ESL	1,200 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
2,4-Pentanediol, 2-methyl- - Vapor fraction	STEL	10 mg/m3	US. ACGIH Threshold Limit Values (03 2017)
2,4-Pentanediol, 2-methyl- - Vapor fraction	STEL	50 ppm	US. ACGIH Threshold Limit Values (03 2017)
2,4-Pentanediol, 2-methyl-	ST ESL	250 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
2,4-Pentanediol, 2-methyl- - Vapor fraction	TWA	25 ppm	US. ACGIH Threshold Limit Values (03 2017)
Acetic acid, phenylmethyl ester	ST ESL	100 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)



			2016)
	AN ESL	10 ppb	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	ST ESL	610 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	AN ESL	61 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	TWA PEL	10 ppm 61 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	TWA	10 ppm	US. ACGIH Threshold Limit Values (2008)
Ammonium hydroxide ((NH4)(OH))	AN ESL	92 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	ST ESL	180 µg/m3	US. Texas. Effects Screening Levels (Texas Commission on Environmental Quality) (11 2016)
	STEL	35 ppm	US. ACGIH Threshold Limit Values (2008)
	TWA	25 ppm	US. ACGIH Threshold Limit Values (2008)
	TWA PEL	25 ppm 18 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	STEL	35 ppm 27 mg/m3	US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants (09 2006)
	STEL	35 ppm 27 mg/m3	US. OSHA Table Z-1-A (29 CFR 1910.1000) (1989)
	STEL	35 ppm 27 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	REL	25 ppm 18 mg/m3	US. NIOSH: Pocket Guide to Chemical Hazards (2005)
	PEL	50 ppm 35 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)

**Appropriate Engineering Controls**

No data available.

**Individual protection measures, such as personal protective equipment**

**General information:**

Use personal protective equipment as required. Personal protection equipment should be chosen according to the CEN standards and in discussion with the supplier of the personal protective equipment.

**Eye/face protection:**

Wear goggles/face shield.

**Skin Protection**

**Hand Protection:**

No data available.

**Other:**

No data available.

**Respiratory Protection:**

In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.

**Hygiene measures:**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing to remove contaminants. Discard contaminated footwear that cannot be cleaned.

**9. Physical and chemical properties**



### Appearance

Physical state:	liquid
Form:	Spray Aerosol
Color:	No data available.
Odor:	No data available.
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	Not applicable
Evaporation rate:	No data available.
Flammability (solid, gas):	No data available.
<b>Upper/lower limit on flammability or explosive limits</b>	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	7,584.233 - 8,963.1845 hPa (20 °C)
Vapor density:	No data available.
Density:	No data available.
Relative density:	No data available.
<b>Solubility(ies)</b>	
Solubility in water:	No data available.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

## 10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of hazardous reactions:	No data available.
Conditions to avoid:	Avoid heat or contamination.
Incompatible Materials:	No data available.
Hazardous Decomposition Products:	No data available.

## 11. Toxicological information



**Information on likely routes of exposure**

**Inhalation:** No data available.  
**Skin Contact:** No data available.  
**Eye contact:** No data available.  
**Ingestion:** No data available.

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

**Inhalation:** No data available.  
**Skin Contact:** No data available.  
**Eye contact:** No data available.  
**Ingestion:** No data available.

**Information on toxicological effects**

**Acute toxicity (list all possible routes of exposure)**

**Oral**

**Product:**

**Specified substance(s):**

2,4-Pentanediol, 2-methyl- LD 50 (Rat): 4,700 mg/kg  
LD 0 (Rat): >= 2,000 mg/kg

**Dermal**

**Product:**

**Specified substance(s):**

2,4-Pentanediol, 2-methyl- LD 0 (Rat): >= 2,000 mg/kg

**Inhalation**

**Product:**

Not classified for acute toxicity based on available data.

**Repeated dose toxicity**

**Product:**

No data available.

**Specified substance(s):**

2,4-Pentanediol, 2-methyl- NOAEL (Rat(Female, Male), Oral, 13 Weeks): 50 mg/kg Oral Experimental result, Key study  
NOAEL (Rat(Female, Male), Oral, 2 Weeks): >= 1,000 mg/kg Oral Experimental result, Supporting study  
NOAEL (Rat(Female, Male), Oral, 13 Weeks): 450 mg/kg Oral Experimental result, Key study

**Skin Corrosion/Irritation**

**Product:**

No data available.



**Specified substance(s):**

2,4-Pentenediol, 2-methyl-  
in vivo (Rabbit): Slightly irritating Experimental result, Supporting study  
in vivo (Rabbit): Not irritant Experimental result, Key study  
in vivo (Rabbit): Slightly irritating Experimental result, Not specified

**Serious Eye Damage/Eye Irritation**

**Product:** No data available.

**Specified substance(s):**

2,4-Pentenediol, 2-methyl-  
Rabbit, 24 - 72 hrs: Slightly irritating (Not Classified)  
Rabbit, 24 - 72 hrs: Slightly irritating (Not Classified)  
Rabbit, 24 - 72 hrs: Slightly irritating (Not Classified)  
Rabbit, 24 - 72 hrs: Slightly irritating (Not Classified)  
Rabbit, 24 - 72 hrs: Slightly irritating (Not Classified)

**Respiratory or Skin Sensitization**

**Product:** No data available.

**Specified substance(s):**

2,4-Pentenediol, 2-methyl-  
Skin sensitization:, in vivo (Guinea pig): Non sensitising

**Carcinogenicity**

**Product:** No data available.

**IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:**

No carcinogenic components identified

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

No carcinogenic components identified

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

No carcinogenic components identified

**Germ Cell Mutagenicity**

**In vitro**

**Product:** No data available.

**In vivo**

**Product:** No data available.

**Reproductive toxicity**

**Product:** No data available.

**Specific Target Organ Toxicity - Single Exposure**

**Product:** No data available.

**Specific Target Organ Toxicity - Repeated Exposure**

**Product:** No data available.



**Aspiration Hazard Product:** No data available.

**Other effects:** No data available.

## 12. Ecological information

### Ecotoxicity:

#### Acute hazards to the aquatic environment:

##### Fish

**Product:** No data available.

##### Specified substance(s):

2,4-Pentanediol, 2-methyl-  
LC 50 (Goldfish (*Carassius auratus*), 24 h): > 5,000 mg/l Mortality  
LC 50 (Inland silverside (*Menidia beryllina*), 96 h): 10,000 mg/l Mortality  
LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): 10,500 - 11,000 mg/l Mortality  
LC 50 (Bleak (*Alburnus alburnus*), 96 h): 7,000 - 9,100 mg/l Mortality  
LC 50 (Bluegill (*Lepomis macrochirus*), 96 h): > 10,000 mg/l Mortality

##### Aquatic Invertebrates

**Product:** No data available.

##### Specified substance(s):

2,4-Pentanediol, 2-methyl-  
EC 50 (Water flea (*Ceriodaphnia reticulata*), 48 h): 2,400 - 3,200 mg/l Intoxication  
EC 50 (Water flea (*Daphnia magna*), 48 h): 2,700 - 3,700 mg/l Intoxication  
EC 50 (Water flea (*Daphnia pulex*), 48 h): 2,800 - 4,000 mg/l Intoxication  
LC 50 (Brine shrimp (*Artemia salina*), 24 h): 5,900 mg/l Mortality  
LC 50 (Harpacticoid copepod (*Nitocra spinipes*), 96 h): 5,800 - 9,900 mg/l Mortality

#### 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:** No data available.



**Specified substance(s):**

2,4-Pentanediol, 2-methyl-  
50 % Detected in water. Experimental result, Not specified  
> 0 % Detected in water. Experimental result, Supporting study  
47 % Detected in water. Experimental result, Supporting study  
48 % Detected in water. Experimental result, Supporting study  
9 % Detected in water. Experimental result, Supporting study

**BOD/COD Ratio**

**Product:** No data available.

**Bioaccumulative potential**

**Bioconcentration Factor (BCF)**

**Product:** No data available.

**Partition Coefficient n-octanol / water (log Kow)**

**Product:** No data available.

**Mobility in soil:** No data available.

**Known or predicted distribution to environmental compartments**

2,4-Pentanediol, 2-methyl- No data available.

**Other adverse effects:** No data available.

**13. Disposal considerations**

**Disposal instructions:** Wash before disposal. Dispose to controlled facilities.

**Contaminated Packaging:** No data available.

**14. Transport information**

**DOT**

UN Number: UN 1950  
UN Proper Shipping Name: Aerosols, non-flammable  
Transport Hazard Class(es)  
Class: 2.2  
Label(s): -  
Packing Group: II  
Marine Pollutant: No  
  
Environmental Hazards: No  
Marine Pollutant: No  
  
Special precautions for user: Not regulated.

**IMDG**

UN Number: UN 1950  
UN Proper Shipping Name: Aerosols, non-flammable  
Transport Hazard Class(es)  
Class: 2



Label(s): -  
 EmS No.: -  
 Packing Group: -  
 Environmental Hazards: No  
 Marine Pollutant No  
 Special precautions for user: Not regulated.

**IATA**

UN Number: UN 1950  
 Proper Shipping Name: Aerosols, non-flammable  
 Transport Hazard Class(es):  
 Class: 2.2  
 Label(s): -  
 Packing Group: -  
 Environmental Hazards: No  
 Marine Pollutant No  
 Special precautions for user: Not regulated.  
 Cargo aircraft only: Allowed.

**15. Regulatory information**

**US Federal Regulations**

Restrictions on use: Not known.

**TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)**  
**US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)**  
 None present or none present in regulated quantities.

**CERCLA Hazardous Substance List (40 CFR 302.4):**

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Ammonium hydroxide ((NH4)(OH))	lbs. 1000

**Superfund Amendments and Reauthorization Act of 1986 (SARA)**

**Hazard categories**

- Sudden Release of Pressure
- Immediate (Acute) Health Hazards
- Gases under pressure
- Simple asphyxiant

**SARA 302 Extremely Hazardous Substance**

None present or none present in regulated quantities.

**SARA 304 Emergency Release Notification**

<u>Chemical Identity</u>	<u>Reportable quantity</u>
Ammonium hydroxide ((NH4)(OH))	lbs. 1000



**SARA 311/312 Hazardous Chemical**

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Water	10000 lbs
1,2-Propanediol	10000 lbs
Benzoic acid, sodium salt (1:1)	10000 lbs
Sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivs.	10000 lbs
2,4-Pentanediol, 2-methyl- Heptanal, 2- (phenylmethylene)-	10000 lbs
Acetic acid, phenylmethyl ester	10000 lbs
7-Octen-2-ol, 2,6-dimethyl- Terpineol, acetate	10000 lbs
Benzoic acid, 2-hydroxy-, pentyl ester	10000 lbs
2,6-Octadien-1-ol, 3,7- dimethyl-, (2E)-	10000 lbs
Cyclohexanol, 2-(1,1- dimethylethyl)-, 1-acetate	10000 lbs
1,6-Octadien-3-ol, 3,7- dimethyl-	10000 lbs
7-Octen-2-ol, 2,6-dimethyl- , 2-formate	10000 lbs
Benzeneethanol	10000 lbs
Oils, orange, sweet	10000 lbs
Benzoic acid, phenylmethyl ester	10000 lbs
Oils, cedarwood, Texan	10000 lbs
Tetradecanoic acid, 1- methylethyl ester	10000 lbs
3-Cyclohexene-1- methanol, $\alpha,\alpha,4$ -trimethyl-	10000 lbs
Benzenemethanol, $\alpha$ - methyl-, 1-acetate	10000 lbs
Ammonium hydroxide ((NH <sub>4</sub> )(OH))	10000 lbs
4,7-Methano-1H-indene-2- carboxaldehyde, octahydro-5-methoxy-	10000 lbs
Oils, rosemary	10000 lbs
6-Octen-1-ol, 3,7-dimethyl-	10000 lbs
Cyclohexanone, 5-methyl- 2-(1-methylethyl)-, (2R,5S)-rel-	10000 lbs
Phenol, 2-methoxy-4-(2- propen-1-yl)-	10000 lbs
Oils, mint, Mentha arvensis piperascens	10000 lbs
3-Cyclohexene-1- carboxaldehyde, 2,4- dimethyl-	10000 lbs
Dodecanal	10000 lbs
Nitrogen	10000 lbs



**SARA 313 (TRI Reporting)**

None present or none present in regulated quantities.

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

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

**US State Regulations**

**US. California Proposition 65**

No ingredient requiring a warning under CA Prop 65.

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

**Chemical Identity**

1,2-Propanediol

**US. Massachusetts RTK - Substance List**

No ingredient regulated by MA Right-to-Know Law present.

**US. Pennsylvania RTK - Hazardous Substances**

**Chemical Identity**

1,2-Propanediol

**US. Rhode Island RTK**

No ingredient regulated by RI Right-to-Know Law present.

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

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

<b>Issue Date:</b>	08/23/2019
<b>Revision Information:</b>	No data available.
<b>Version #:</b>	1.0
<b>Further Information:</b>	No data available.
<b>Disclaimer:</b>	This information is provided without warranty. The information is believed to be correct. This information should be used to make an independent determination of the methods to safeguard workers and the environment.