

SAFETY DATA SHEET

according to the OSHA
Hazard Communication Standard

Version 6.18
Revision Date 07/14/2026
Print Date 07/15/2026

SECTION 1. IDENTIFICATION

1.1 Product identifiers

Product name : Residual Solvents in Packaging Material
Mixture 2

Product Number : 48995-U
Brand : Supelco

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

Identified uses : Laboratory chemicals, Synthesis of substances

Restrictions on use : Not Available

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 2

Serious eye damage : Category 1

Carcinogenicity : Category 2

Reproductive toxicity : Category 1B

Specific target organ toxicity - single exposure : Category 1 (Immune system)

Specific target organ toxicity - single exposure : Category 3 (Central nervous system)

Specific target organ toxicity - repeated exposure : Category 2 (thymus)

Other hazards

May form explosive peroxides.
Repeated exposure may cause skin dryness or cracking.

GHS label elements

Hazard pictograms : 

Signal word : Danger

Hazard statements : H225 Highly flammable liquid and vapour.
H318 Causes serious eye damage.
H336 May cause drowsiness or dizziness.
H351 Suspected of causing cancer.
H360 May damage fertility or the unborn child.
H370 Causes damage to organs (Immune system).
H373 May cause damage to organs (thymus) through prolonged or repeated exposure.

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.
P233 Keep container tightly closed.
P240 Ground and bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting equipment.
P242 Use non-sparking tools.
P243 Take action to prevent static discharges.
P260 Do not breathe mist or vapours.
P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.

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.

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

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P403 + P235 Store in a well-ventilated place. Keep cool.

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
Tetrahydrofuran	109-99-9*	>= 7 - <= 13	TSC
acetone	67-64-1*	>= 7 - <= 13	TSC
2-Propanol	67-63-0*	>= 7 - <= 13	TSC
1-methoxy-2-propanol	107-98-2*	>= 7 - <= 13	TSC
iso-butanol	78-83-1*	>= 7 - <= 13	TSC

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4-methylpentan-2-one	108-10-1*	$\geq 7 - \leq 13$	TSC
isopropyl acetate	108-21-4*	$\geq 7 - \leq 13$	TSC
propyl acetate	109-60-4*	$\geq 7 - \leq 13$	TSC
2-Methoxyethanol	109-86-4*	$\geq 7 - \leq 13$	TSC
2-Ethoxyethyl acetate	111-15-9*	$\geq 7 - \leq 13$	TSC
1-Propanol	71-23-8*	$\geq 7 - \leq 13$	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. Call a physician immediately.
In case of eye contact	: After eye contact: rinse out with plenty of water. Immediately 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 GHS label elements) 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	: Foam Carbon dioxide (CO ₂)
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Dry powder

Unsuitable extinguishing media : For this substance/mixture no limitations of extinguishing agents are given.

Specific hazards during fire fighting : Mixture with combustible ingredients.

Pay attention to flashback.

Vapours are heavier than air and may spread along floors.

Development of hazardous combustion gases or vapours possible in the event of fire.

Forms explosive mixtures with air at ambient temperatures.

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.

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Evacuate the danger area, observe emergency procedures, consult an expert.
 Advice for emergency responders:
 Wear appropriate personal protective equipment, as indicated in Section 8.

Environmental precautions	: Do not let product enter drains. Risk of explosion.
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 GHS label elements

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	: Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorised persons.
Storage class	: 3, Flammable liquids
Recommended storage temperature	: 36 - 46 °F / 2 - 8 °C / / /
Further information on storage stability	: Forms explosive peroxides on prolonged storage May form peroxides on contact with air. Test for peroxide formation periodically and before

distillation.
Test for peroxide formation periodically and before
distillation.

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Tetrahydrofuran	109-99-9	TWA	50 ppm	ACGIH
		STEL	100 ppm	ACGIH
		ST	250 ppm 735 mg/m ³	NIOSH REL
		TWA	200 ppm 590 mg/m ³	NIOSH REL
		TWA	200 ppm 590 mg/m ³	OSHA Z-1
acetone	67-64-1	TWA	250 ppm	ACGIH
		STEL	500 ppm	ACGIH
		TWA	250 ppm 590 mg/m ³	NIOSH REL
		TWA	1,000 ppm 2,400 mg/m ³	OSHA Z-1
		TWA	200 ppm	ACGIH
2-Propanol	67-63-0	STEL	400 ppm	ACGIH
		ST	500 ppm 1,225 mg/m ³	NIOSH REL
		TWA	400 ppm 980 mg/m ³	NIOSH REL
		TWA	400 ppm 980 mg/m ³	OSHA Z-1
		TWA	50 ppm	ACGIH
1-methoxy-2-propanol	107-98-2	STEL	100 ppm	ACGIH
		ST	150 ppm 540 mg/m ³	NIOSH REL
		TWA	100 ppm 360 mg/m ³	NIOSH REL
		TWA	2 ppm	US WEEL
		STEL	5 ppm	US WEEL
iso-butanol	78-83-1	TWA	50 ppm	ACGIH
		TWA	50 ppm 150 mg/m ³	NIOSH REL
		TWA	100 ppm 300 mg/m ³	OSHA Z-1
		TWA	2 ppm	US WEEL
		STEL	5 ppm	US WEEL
4-methylpentan-2-one	108-10-1	STEL	75 ppm	ACGIH
		TWA	50 ppm	OSHA P0

			205 mg/m3	
		STEL	75 ppm 300 mg/m3	OSHA P0
		TWA	100 ppm 410 mg/m3	OSHA Z-1
		TWA	20 ppm	ACGIH
		TWA	50 ppm 205 mg/m3	NIOSH REL
		ST	75 ppm 300 mg/m3	NIOSH REL
isopropyl acetate	108-21-4	TWA	250 ppm 950 mg/m3	OSHA Z-1
		TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
propyl acetate	109-60-4	ST	250 ppm 1,050 mg/m3	NIOSH REL
		TWA	200 ppm 840 mg/m3	NIOSH REL
		TWA	200 ppm 840 mg/m3	OSHA Z-1
		TWA	100 ppm	ACGIH
		STEL	150 ppm	ACGIH
2-Methoxyethanol	109-86-4	TWA	0.1 ppm	ACGIH
		TWA	25 ppm 80 mg/m3	OSHA Z-1
		TWA	25 ppm 80 mg/m3	OSHA P0
		TWA	0.1 ppm 0.3 mg/m3	NIOSH REL
		TWA	2 ppm	US WEEL
		STEL	5 ppm	US WEEL
2-Ethoxyethyl acetate	111-15-9	TWA	5 ppm	ACGIH
		TWA	100 ppm 540 mg/m3	OSHA Z-1
		TWA	100 ppm 540 mg/m3	OSHA P0
		TWA	0.5 ppm 2.7 mg/m3	NIOSH REL
1-Propanol	71-23-8	TWA	100 ppm	ACGIH
		TWA	200 ppm 500 mg/m3	NIOSH REL
		ST	250 ppm 625 mg/m3	NIOSH REL
		TWA	200 ppm 500 mg/m3	OSHA Z-1

Biological occupational exposure limits

Components	CAS-No.	Control parameters	Biological specimen	Sampling time	Permissible concentration	Basis
Tetrahydrofuran	109-99-9	Tetrahydrofuran	Urine	End of shift (As soon as possible after exposure ceases)	2 mg/l	ACGIH BEI
acetone	67-64-1	Acetone	Urine	End of shift (As soon as possible after exposure ceases)	25 mg/l	ACGIH BEI
2-Propanol	67-63-0	Acetone	Urine	End of shift at end of workweek	40 mg/l	ACGIH BEI
4-methylpentan-2-one	108-10-1	methyl isobutyl ketone	Urine	End of shift (As soon as possible after exposure ceases)	1 mg/l	ACGIH BEI
2-Methoxyethanol	109-86-4	2-Methoxyacetic acid	Urine	End of shift at end of workweek	1 mg/g creatinine	ACGIH BEI
2-Ethoxyethyl acetate	111-15-9	2-Ethoxyacetic acid	Urine	End of shift at end of workweek	40 mg/g creatinine	ACGIH BEI

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 AX

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

Remarks : required

Eye protection : Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).
Tightly fitting safety goggles

Skin and body protection : Flame retardant antistatic 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

Colour : colourless

Odour : No data available

Odour Threshold : No data available
pH : No data available

Melting point/ range : -139 °F / -95 °C

Boiling point/boiling range : 133 °F / 56 °C (1,013 hPa)

Flash point : -2.0 °F / -18.9 °C

Evaporation rate : No data available

Flammability (solid, gas) : No data available

Flammability (liquids) : No data available

Burning rate : No data available

Upper explosion limit /
Upper flammability limit : Upper flammability limit
13 %(V)

Lower explosion limit /
Lower flammability limit : Lower flammability limit
2.6 %(V)

Vapour pressure : 241 hPa (77 °F / 25 °C)

Relative vapour density : No data available

Relative density : No data available

Density : 0.792 g/cm³

Water solubility : No data available

Partition coefficient: n-
octanol/water : No data available

Autoignition temperature : No data available

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
Particle size : No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Formation of peroxides possible. Vapours may form explosive mixture with air.
Chemical stability	: Reacts with air to form peroxides. The product is chemically stable under standard ambient conditions (room temperature) .
Possibility of hazardous reactions	: No data available
Conditions to avoid	: Warming. Moisture.
Incompatible materials	: Aluminium Strong bases Acids Bases Oxidizing agents Strong oxidizing agents Halogenated compounds Strong acids Acid chlorides Acid anhydrides Reducing agents Oxygen acids Nitrates Acetone reacts violently with phosphorous oxychloride.
Hazardous decomposition products	: Peroxides : In the event of fire: see section 5

SECTION 11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Mixture

Acute toxicity

Acute toxicity estimate Oral - 3,397 mg/kg
(Calculation method)

Acute toxicity estimate Inhalation - 4 h - 30.36 mg/l - vapour (Calculation method)

Symptoms: Possible symptoms: , mucosal irritations, Cough, Shortness of breath, Possible damages: , damage of respiratory tract
Acute toxicity estimate Dermal - 3,533 mg/kg
(Calculation method)

Skin corrosion/irritation

Remarks: Repeated exposure with the mixture may cause skin dryness or cracking.

Serious eye damage/eye irritation

Remarks: Mixture causes serious eye damage.

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

IARC: 2B - Group 2B: Possibly carcinogenic to humans (Tetrahydrofuran)

IARC: 2B - Group 2B: Possibly carcinogenic to humans (4-methylpentan-2-one)

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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

narcosis, Convulsions, Dizziness, Headache
Stomach - Irregularities - Based on Human Evidence

Kidney - Irregularities - Based on Human Evidence

Skin - Dermatitis - Based on Human Evidence

Components

Tetrahydrofuran

Acute toxicity

LD50 Oral - Rat - male and female - 1,650 mg/kg

Remarks: (ECHA)

Symptoms: Irritation of mucous membranes

LC50 Inhalation - Rat - male and female - 6 h - > 14.7 mg/l - vapour
(US-EPA)
LD50 Dermal - Rat - male and female - > 2,000 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 72 h

(Draize Test)

Remarks: Repeated or prolonged exposure may cause skin irritation and dermatitis, due to degreasing properties of the product.

Serious eye damage/eye irritation

Eyes - Rabbit

(Evaluated according F.H.S.A.= Federal Hazardous Substance Act.)

Remarks: Causes serious eye damage.

(ECHA)

Eyes - Rabbit

(Tested according to Annex V of Directive 67/548/EEC.)

Remarks: Causes serious eye damage.

(ECHA)

Respiratory or skin sensitization

Local lymph node assay (LLNA) - Mouse

Result: negative

(OECD Test Guideline 429)

Germ cell mutagenicity

Test Type: Ames test

Test system: *S. typhimurium*

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Result: negative

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Result: negative

Method: OECD Test Guideline 474

Species: Mouse - male and female - Red blood cells (erythrocytes)

Result: negative

Carcinogenicity

Suspected of causing cancer.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause respiratory irritation. - Central nervous system

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

May cause drowsiness or dizziness.

Acute oral toxicity - Irritation of mucous membranes

Specific target organ toxicity - repeated exposure

Aspiration hazard

No data available

acetone

Acute toxicity

LD50 Oral - Rat - female - 5,800 mg/kg

Remarks: (ECHA)

Symptoms: Stomach/intestinal disorders, Risk of aspiration upon vomiting.,
Pulmonary failure possible after aspiration of vomit.

LC50 Inhalation - Rat - 4 h - 76 mg/l - vapour

Remarks: Unconsciousness

Drowsiness

Dizziness

(External MSDS)

LD50 Dermal - Rabbit - 20,000 mg/kg

Remarks: (IUCLID)

Skin corrosion/irritation

Skin - Rabbit

Result: Mild skin irritation - 24 h

(Draize Test)

Remarks: (RTECS)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Eye irritation - 24 h

(Draize Test)

Remarks: (RTECS)

Respiratory or skin sensitization

Maximisation Test - Guinea pig

Result: negative

Remarks: (ECHA)

Chronic exposure may cause dermatitis.

Germ cell mutagenicity

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster ovary cells

Result: negative

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Mouse lymphoma test

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation - May cause drowsiness or dizziness. - Narcotic effects

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

Acute oral toxicity - Stomach/intestinal disorders, Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

2-Propanol**Acute toxicity**

LD50 Oral - Rat - 5,840 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - 37.5 mg/l - vapour

(OECD Test Guideline 403)

LD50 Dermal - Rabbit - 12,800 mg/kg

Remarks: (RTECS)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Eye irritation

(OECD Test Guideline 405)

Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Respiratory or skin sensitization

Buehler Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: Ames test

Test system: Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Result: negative

Method: OECD Test Guideline 474

Species: Mouse - male and female - Bone marrow

Result: negative

Carcinogenicity

This product is or contains a component that is not classifiable as to its carcinogenicity based on its IARC, ACGIH, NTP, or EPA classification.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

Inhalation, Oral - May cause drowsiness or dizziness. - Central nervous system
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Acute inhalation toxicity - Central nervous system

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

1-methoxy-2-propanol**Acute toxicity**

LD50 Oral - Rat - male and female - 4,016 mg/kg

(EC Directive 92/69/EEC B.1 Acute Toxicity (Oral))

Symptoms: Nausea, Vomiting, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

LC50 Inhalation - Rat - 4 h - > 6 mg/l - aerosol

Remarks: (IUCLID)

Inhalation: Irritating to respiratory system.

LD50 Dermal - Rat - male and female - > 2,000 mg/kg

(Regulation (EC) No. 440/2008, Annex, B.3)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(Regulation (EC) No. 440/2008, Annex, B.4)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: No eye irritation

(Regulation (EC) No. 440/2008, Annex, B.5)

Respiratory or skin sensitization

Maximisation Test - Guinea pig

Result: negative

(Regulation (EC) No. 440/2008, Annex, B.6)

Germ cell mutagenicity

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

Test Type: Chromosome aberration test in vitro

Test system: Chinese hamster ovary cells

Result: negative

Method: OECD Test Guideline 474

Species: Mouse - male and female - Bone marrow

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness. - Central nervous system

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

Acute oral toxicity - Nausea, Vomiting, Irritations of mucous membranes in the mouth, pharynx, oesophagus and gastrointestinal tract.

Specific target organ toxicity - repeated exposure

Aspiration hazard

No data available

iso-butanol

Acute toxicity

LD50 Oral - Rat - female - 3,350 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 6 h - > 18.18 mg/l - vapour

Remarks: (ECHA)

LD50 Dermal - Rabbit - female - 2,460 mg/kg

(OECD Test Guideline 402)

Skin corrosion/irritation

Remarks: Causes skin irritation.

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

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Corrosive - 24 h

(OECD Test Guideline 405)

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

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster fibroblasts

Result: negative

Remarks: (ECHA)

Test Type: Micronucleus test

Test system: Chinese hamster fibroblasts

Result: negative

Remarks: (ECHA)

Test Type: Ames test
Test system: Escherichia coli/Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 474
Species: Mouse - male and female - Red blood cells (erythrocytes)
Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause respiratory irritation. - Respiratory Tract

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

May cause drowsiness or dizziness. - Central nervous system

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

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

4-methylpentan-2-one

Acute toxicity

LD50 Oral - Rat - 2,080 mg/kg

(OECD Test Guideline 401)

LC50 Inhalation - Rat - male - 4 h - 11.6 mg/l - vapour

(OECD Test Guideline 403)

Dermal: No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: slight irritation - 72 h

(OECD Test Guideline 405)

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

Respiratory or skin sensitization

Maximisation Test - Guinea pig

Result: negative
(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: Ames test
Test system: Salmonella typhimurium
Result: negative
Test Type: Mutagenicity (mammal cell test): chromosome aberration.
Test system: rat hepatocytes
Result: negative
Test Type: In vitro mammalian cell gene mutation test
Test system: mouse lymphoma cells
Result: negative
Method: OECD Test Guideline 474
Species: Mouse - male and female - Bone marrow
Result: negative

Carcinogenicity

Suspected of causing cancer if inhaled.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness. - Respiratory Tract
Remarks: Classified according to Regulation (EU) 1272/2008, Annex VI (Table 3.1/3.2)

Specific target organ toxicity - repeated exposure

Aspiration hazard

No data available

isopropyl acetate

Acute toxicity

LD50 Oral - Rat - male - 6,750 mg/kg
Remarks: (ECHA)
Symptoms: Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.
LC50 Inhalation - Rat - female - 4 h - 63.75 mg/l - vapour
Remarks: (ECHA)
Symptoms: Possible damages:, mucosal irritations
LD50 Dermal - Rabbit - male - > 20,000 mg/kg
Remarks: (ECHA)

Skin corrosion/irritation

Remarks: No data available

Serious eye damage/eye irritation

Eyes - Rabbit
Result: Eye irritation
Remarks: (IUCLID)
Remarks: (Regulation (EC) No 1272/2008, Annex VI)

Respiratory or skin sensitization

Sensitisation test: - Guinea pig

Result: negative

Remarks: (IUCLID)

Germ cell mutagenicity

Test Type: Ames test

Test system: S. typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness. - Central nervous system

Acute oral toxicity - Risk of aspiration upon vomiting., Pulmonary failure possible after aspiration of vomit.

Acute inhalation toxicity - Possible damages:, mucosal irritations

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

propyl acetate**Acute toxicity**

LD50 Oral - Rat - male - 8,700 mg/kg

Remarks: (ECHA)

LC50 Inhalation - Rat - 4 h - 32 mg/l - vapour

Remarks: (ECHA)

LD50 Dermal - Rabbit - male - > 17,800 mg/kg

Symptoms: Erythema, Necrosis

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

Remarks: (ECHA)

Remarks: Repeated exposure with the mixture may cause skin dryness or cracking.

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Moderate eye irritation

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness.

Acute dermal toxicity - Erythema, Necrosis

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

2-Methoxyethanol**Acute toxicity**

LD50 Oral - Rabbit - 890 mg/kg

Remarks: Behavioral:General anesthetic.

Blood:Other hemolysis with or without anemia.

(RTECS)

Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary oedema and pneumonitis.

Acute toxicity estimate Inhalation - Expert judgement - 4 h - 11 mg/l - vapour

LD50 Dermal - Rabbit - 1,280 mg/kg

Remarks: (RTECS)

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 4 h

(Directive 67/548/EEC, Annex V, B.4.)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: slight irritation

(OECD Test Guideline 405)

Respiratory or skin sensitization

Maximisation Test - Guinea pig

Result: negative

(OECD Test Guideline 406)

Germ cell mutagenicity

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Result: negative

Method: OECD Test Guideline 475

Species: Mouse - male

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

May damage the unborn child.

May damage fertility.

Specific target organ toxicity - single exposure

Causes damage to organs. - Immune system

Acute oral toxicity - Risk of aspiration upon vomiting., Aspiration may cause pulmonary oedema and pneumonitis.

Specific target organ toxicity - repeated exposure

May cause damage to organs through prolonged or repeated exposure.

- thymus

Oral - Testes, thymus

Aspiration hazard

No data available

2-Ethoxyethyl acetate

Acute toxicity

LD50 Oral - Rabbit - 1,950 mg/kg

Remarks: (RTECS)

Acute toxicity estimate Inhalation - 4 h - 11 mg/l - vapour
(Expert judgement)

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

Acute toxicity estimate Dermal - 1,100 mg/kg
(Expert judgement)

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

Skin corrosion/irritation

No data available

Serious eye damage/eye irritation

No data available

Respiratory or skin sensitization

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

No data available

Reproductive toxicity

May damage the unborn child.

May damage fertility.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

1-Propanol**Acute toxicity**

Symptoms: Risk of aspiration upon vomiting., Aspiration may cause pulmonary oedema and pneumonitis.

LC50 Inhalation - Rat - male and female - 4 h - > 33.8 mg/l - vapour
(OECD Test Guideline 403)

Symptoms: Possible damages:, mucosal irritations

LD50 Dermal - Rabbit - male - 4,032 mg/kg
(OECD Test Guideline 402)

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Causes serious eye damage.

(OECD Test Guideline 405)

Respiratory or skin sensitization

Maximisation Test - Guinea pig

Result: negative

Remarks: (ECHA)

Patch test: - Human

Result: negative

Remarks: (IUCLID)

Germ cell mutagenicity

Test Type: Ames test

Test system: Escherichia coli/Salmonella typhimurium

Result: negative

Test Type: In vitro mammalian cell gene mutation test

Test system: Chinese hamster ovary cells

Result: negative

Test Type: Mutagenicity (mammal cell test): chromosome aberration.

Test system: Chinese hamster lung cells

Result: negative

Carcinogenicity

No data available

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

May cause drowsiness or dizziness. - Central nervous system

Acute oral toxicity - Risk of aspiration upon vomiting., Aspiration may cause pulmonary oedema and pneumonitis.

Acute inhalation toxicity - Possible damages:, mucosal irritations

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

Tetrahydrofuran:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 2,160 mg/l
End point: mortality
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3,485 mg/l
End point: mortality
Exposure time: 48 h
Test Type: static test
Method: OECD Test Guideline 202

Toxicity to fish (Chronic toxicity) : NOEC (Pimephales promelas (fathead minnow)): 216 mg/l
End point: Growth inhibition
Exposure time: 33 d
Test Type: flow-through test
Analytical monitoring: yes
Remarks: (ECHA)

acetone:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 6,210 mg/l
End point: mortality
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : LC50 (Daphnia pulex (Water flea)): 8,800 mg/l
End point: mortality
Exposure time: 48 h

Test Type: static test
Remarks: (ECHA)

Toxicity to algae/aquatic plants : NOEC (*M.aeruginosa*): 530 mg/l
Exposure time: 8 d
Test Type: static test
Method: DIN 38412
Remarks: (maximum permissible toxic concentration) (IUCLID)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): 2,212 mg/l
End point: reproduction rate
Exposure time: 28 d
Test Type: flow-through test
Remarks: (ECHA)

Toxicity to microorganisms : EC50 (activated sludge): 61.15 mg/l
Exposure time: 30 min
Test Type: static test
Method: OECD Test Guideline 209

2-Propanol:

Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): 9,640 mg/l
End point: mortality
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia magna* (Water flea)): 13,299 mg/l
Exposure time: 48 h
Remarks: (IUCLID)

Toxicity to algae/aquatic plants : IC50 (*Desmodesmus subspicatus* (green algae)): > 1,000 mg/l
Exposure time: 72 h
Remarks: (IUCLID)

Toxicity to microorganisms : EC5 (*Pseudomonas putida*): 1,050 mg/l
Exposure time: 16 h
Remarks: (Lit.)

1-methoxy-2-propanol:

Toxicity to fish : LC50 (*Leuciscus idus* (Golden orfe)): 6,812 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Method: DIN 38412 part 15

Toxicity to daphnia and other aquatic invertebrates : LC50 (*Daphnia magna* (Water flea)): 23,300 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
GLP: yes
Remarks: (ECHA)

Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata* (green algae)): > 1,000 mg/l
Exposure time: 7 d
Test Type: static test
GLP: yes
Remarks: (ECHA)

iso-butanol:

Toxicity to fish : LC50 (*Pimephales promelas* (fathead minnow)): 1,430 mg/l
End point: mortality
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates : EC50 (*Daphnia pulex* (Water flea)): 1,100 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Remarks: (ECHA)

Toxicity to algae/aquatic plants : ErC50 (*Pseudokirchneriella subcapitata*): 1,799 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (*Daphnia magna* (Water flea)): 20 mg/l
End point: reproduction rate
Exposure time: 21 d
Analytical monitoring: yes
Remarks: (ECHA)

4-methylpentan-2-one:

Toxicity to fish : LC50 (*Danio rerio* (zebra fish)): > 179 mg/l
End point: mortality
Exposure time: 96 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 203
GLP: yes

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 200 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia (water flea)): 30 - 78 mg/l
End point: reproduction rate
Exposure time: 21 d
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 211

isopropyl acetate:

Toxicity to daphnia and other aquatic invertebrates : EC50 (Artemia salina (Brine shrimp)): 110 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Remarks: (ECHA)

propyl acetate:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 60 mg/l
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Remarks: (ECHA)

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 91.5 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 202
GLP: yes

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 672 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: OECD Test Guideline 201
GLP: yes

2-Methoxyethanol:

Toxicity to fish : LC50 (Lepomis macrochirus (Bluegill sunfish)): > 10,000 mg/l

End point: mortality
Exposure time: 96 h
Test Type: static test
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 27,000 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: semi-static test
Analytical monitoring: yes
Method: ISO 6341

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 25,500 mg/l
Exposure time: 72 h
Test Type: static test
Analytical monitoring: yes
Method: ISO 8692

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): > 500 mg/l
End point: reproduction rate
Exposure time: 21 d
Test Type: semi-static test
Analytical monitoring: yes
Method: OECD Test Guideline 211

Toxicity to microorganisms : EC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209
GLP: yes

2-Ethoxyethyl acetate:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 40.7 - 43.6 mg/l
Exposure time: 96 h

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 193.6 mg/l
Exposure time: 48 h

Toxicity to algae/aquatic plants : EC50 (Desmodesmus subspicatus (green algae)): > 1,000 mg/l
Exposure time: 72 h

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 30 mg/l
End point: reproduction rate
Exposure time: 21 d
Method: OECD Test Guideline 211

Toxicity to : EC10 (Pseudomonas putida): 435 mg/l

microorganisms

Exposure time: 16 h
Method: DIN 38412

Ecotoxicology Assessment

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

1-Propanol:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 4,555 mg/l
End point: mortality
Exposure time: 96 h
Test Type: flow-through test
Analytical monitoring: yes
Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 3,644 mg/l
End point: Immobilization
Exposure time: 48 h
Test Type: static test
Method: DIN 38412

Toxicity to algae/aquatic plants : ErC50 (Pseudokirchneriella subcapitata (green algae)): 9,170 mg/l
Exposure time: 48 h
Test Type: static test
Remarks: (ECHA)

Toxicity to microorganisms : IC50 (activated sludge): > 1,000 mg/l
Exposure time: 3 h
Test Type: static test
Method: OECD Test Guideline 209

Persistence and degradability

Components:

Tetrahydrofuran:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 2 mg/l
Biochemical oxygen demand
Result: Not readily biodegradable.
Biodegradation: 39 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

acetone:

Biodegradability : aerobic
Inoculum: activated sludge
Result: Readily biodegradable.

Biodegradation: 91 %
Exposure time: 28 d
Method: OECD Test Guideline 301B

Biochemical Oxygen Demand (BOD) : 1,850 mg/g
Incubation time: 5 d
Remarks: (IUCLID)

Chemical Oxygen Demand (COD) : 2,070 mg/g
Remarks: (IUCLID)

ThOD : 2,200 mg/g
Remarks: (Lit.)

2-Propanol:

Biodegradability : aerobic
Inoculum: Sewage sludge
Result: Readily biodegradable.
Biodegradation: 53 %
Exposure time: 5 d
Method: Directive 67/548/EEC, Annex V, C.6

ThOD : 2,400 mg/g
Remarks: (Lit.)

BOD/ThOD : 49 %
Remarks: (IUCLID)

1-methoxy-2-propanol:

Biodegradability : aerobic
Concentration: 86 mg/l
Dissolved organic carbon (DOC)
Result: Readily biodegradable.
Biodegradation: 96 %
Exposure time: 28 d
Method: OECD Test Guideline 301E
GLP: yes

iso-butanol:

Biodegradability : aerobic
Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 70 - 80 %
Exposure time: 28 d
Method: OECD Test Guideline 301D

Chemical Oxygen Demand (COD) : 2,600 mg/g
Remarks: (External MSDS)

ThOD : 2,600 mg/g

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Remarks: (Lit.)

BOD/ThOD : 64 %
Remarks: (Lit.)

4-methylpentan-2-one:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 102 mg/l
Result: Readily biodegradable.
Biodegradation: 83 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
GLP: yes

ThOD : 2,720 mg/g
Remarks: (Lit.)

isopropyl acetate:

Biodegradability : aerobic
Inoculum: activated sludge
Result: Readily biodegradable.
Biodegradation: 76 %
Exposure time: 20 d
Method: OECD Test Guideline 301D

BOD/ThOD : 61 %

propyl acetate:

Biodegradability : aerobic
Result: Readily biodegradable.
Biodegradation: 62 %
Exposure time: 5 d
Method: OECD Test Guideline 301D

2-Methoxyethanol:

Biodegradability : aerobic
Inoculum: activated sludge
Concentration: 10 mg/l
Result: Readily biodegradable.
Biodegradation: 88 %
Exposure time: 20 d
Remarks: (ECHA)

2-Ethoxyethyl acetate:

Biodegradability : Result: Readily biodegradable.
Biodegradation: 97 %
Exposure time: 14 d

Biochemical Oxygen Demand (BOD) : < 440 mg/g
Incubation time: 5 d
Remarks: (IUCLID)

1-Propanol:

Biodegradability : aerobic
Concentration: 3 mg/l
Result: Readily biodegradable.
Biodegradation: 75 %
Exposure time: 20 d
Remarks: (ECHA)

Chemical Oxygen Demand (COD) : 2,230 mg/g
Remarks: (IUCLID)

BOD/COD : BOD/COD: 73 %
Remarks: (IUCLID)

ThOD : 2,400 mg/g
Remarks: (Lit.)

BOD/ThOD : < 2 %

Bioaccumulative potential

Components:

Tetrahydrofuran:

Partition coefficient: n-octanol/water : log Pow: 0.45 (77 °F / 25 °C)
Method: OECD Test Guideline 107
Remarks: Bioaccumulation is not expected.

acetone:

Bioaccumulation : Bioconcentration factor (BCF): < 10
Remarks: Does not bioaccumulate.

2-Propanol:

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 4).

Partition coefficient: n-octanol/water : log Pow: 0.05
Method: OECD Test Guideline 107
Remarks: Bioaccumulation is not expected.

1-methoxy-2-propanol:

Partition coefficient: n-octanol/water : Pow: < 1 (68 °F / 20 °C)
pH: 6.8

Method: OECD Test Guideline 117
Remarks: Bioaccumulation is not expected.

iso-butanol:

Partition coefficient: n-octanol/water : log Pow: 1 (77 °F / 25 °C)
pH: 7
Method: OECD Test Guideline 117
Remarks: Bioaccumulation is not expected.

4-methylpentan-2-one:

Partition coefficient: n-octanol/water : log Pow: 1.9
pH: 6.7
Method: OECD Test Guideline 117
Remarks: Bioaccumulation is not expected.

propyl acetate:

Bioaccumulation : Remarks: No data available

Partition coefficient: n-octanol/water : log Pow: 1.4
Method: see user defined free text
GLP: yes
Remarks: (ECHA)

2-Methoxyethanol:

Bioaccumulation : Remarks: No bioaccumulation is to be expected (log Pow <= 4).

Partition coefficient: n-octanol/water : log Pow: -0.77 (82 °F / 28 °C)
pH: 7
Method: (experimental)
Remarks: Bioaccumulation is not expected.
(Lit.)

2-Ethyloxyethyl acetate:

Partition coefficient: n-octanol/water : log Pow: 0.24
Method: OECD Test Guideline 107
Remarks: Bioaccumulation is not expected.

1-Propanol:

Bioaccumulation : Remarks: The product is miscible in water and readily biodegradable in both water and soil. Accumulation is not expected.

Partition coefficient: n-octanol/water : log Pow: 0.2 (77 °F / 25 °C)
pH: 7
Method: OECD Test Guideline 117
GLP: yes

Remarks: Bioaccumulation is not expected.

Mobility in soil

No data available

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:

Tetrahydrofuran:

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.

acetone:

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

2-Propanol:

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

1-methoxy-2-propanol:

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.

iso-butanol:

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.

4-methylpentan-2-one:

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.

isopropyl acetate:

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.

propyl acetate:

Additional ecological information : Discharge into the environment must be avoided.

2-Ethyloxyethyl acetate:

Additional ecological information : Avoid release to the environment.

1-Propanol:

Results of PBT and vPvB assessment : This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

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

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**

UN/ID No. : UN 1993
Proper shipping name : Flammable liquid, n.o.s.

(2-Ethyloxyethyl acetate)
Class : 3
Packing group : II
Labels : Class 3 - Flammable liquids
Packing instruction (cargo aircraft) : 364
Packing instruction (passenger aircraft) : 353

IMDG-Code

UN number : UN 1993
Proper shipping name : FLAMMABLE LIQUID, N.O.S.
(2-Ethyloxyethyl acetate)
Class : 3
Packing group : II
Labels : 3
EmS Code : F-E, S-E
Marine pollutant : no

Transport in bulk according to IMO instruments

Not applicable for product as supplied.

National Regulations

49 CFR

UN/ID/NA number : UN 1993
Proper shipping name : Flammable liquids, n.o.s.
(2-Ethyloxyethyl acetate)
Class : 3

Packing group : II
Labels : Class 3 - Flammable liquids
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)
iso-butanol	78-83-1	100	100 (F005)

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

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:

2-Propanol	67-63-0	>= 5 - < 10 %
4-methylpentan-2-one	108-10-1	>= 5 - < 10 %
2-Methoxyethanol	109-86-4	>= 5 - < 10 %
2-Ethoxyethyl acetate	111-15-9	>= 5 - < 10 %

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):

4-methylpentan-2-one	108-10-1	>= 5 - < 10 %
2-Methoxyethanol	109-86-4	>= 5 - < 10 %
2-Ethoxyethyl acetate	111-15-9	>= 5 - < 10 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

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):

acetone	67-64-1	>= 5 - < 10 %
2-Propanol	67-63-0	>= 5 - < 10 %
iso-butanol	78-83-1	>= 5 - < 10 %
4-methylpentan-2-one	108-10-1	>= 5 - < 10 %
isopropyl acetate	108-21-4	>= 5 - < 10 %
2-Methoxyethanol	109-86-4	>= 5 - < 10 %
2-Ethoxyethyl acetate	111-15-9	>= 5 - < 10 %
1-Propanol	71-23-8	>= 5 - < 10 %

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

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

Tetrahydrofuran	109-99-9
acetone	67-64-1
2-Propanol	67-63-0
1-methoxy-2-propanol	107-98-2
iso-butanol	78-83-1
4-methylpentan-2-one	108-10-1
isopropyl acetate	108-21-4
propyl acetate	109-60-4
2-Methoxyethanol	109-86-4
2-Ethyloxyethyl acetate	111-15-9
1-Propanol	71-23-8

Pennsylvania Right To Know

Tetrahydrofuran	109-99-9
acetone	67-64-1
2-Propanol	67-63-0
1-methoxy-2-propanol	107-98-2
iso-butanol	78-83-1
4-methylpentan-2-one	108-10-1
isopropyl acetate	108-21-4
propyl acetate	109-60-4
2-Methoxyethanol	109-86-4
2-Ethyloxyethyl acetate	111-15-9
1-Propanol	71-23-8

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

2-Methoxyethanol	109-86-4
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Washington Chemicals of High Concern

2-Methoxyethanol	109-86-4
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California Prop. 65

WARNING: This product can expose you to chemicals including Tetrahydrofuran, 4-methylpentan-2-one, which is/are known to the State of California to cause cancer, and 4-methylpentan-2-one, 2-Methoxyethanol, 2-Ethyloxyethyl acetate, 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

The following substance(s) is/are subject to a Significant New Use Rule:

2-Methoxyethanol	109-86-4	See 40 CFR § 721.10001; Final Rule
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2-Ethoxyethyl acetate	111-15-9	See 40 CFR § 721.10001; Final Rule
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The following substance(s) is/are subject to TSCA 12(b) export notification requirements:

2-Methoxyethanol	109-86-4
2-Ethoxyethyl acetate	111-15-9

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 P0	: USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	: USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
US WEEL	: USA. Workplace Environmental Exposure Levels (WEEL)
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-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
OSHA P0 / TWA	: 8-hour time weighted average
OSHA P0 / STEL	: Short-term exposure limit
OSHA Z-1 / TWA	: 8-hour time weighted average
US WEEL / TWA	: 8-hr TWA
US WEEL / STEL	: Short-Term TWA

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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