

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1 Product identifier**

- Trade name AEROFROTH® 70 FROTHER

1.2 Relevant identified uses of the substance or mixture and uses advised against**Uses of the Substance / Mixture**

- Frother

1.3 Details of the supplier of the safety data sheet**Company**

CYTEC INDUSTRIES INC.
504 CARNEGIE CENTER
PRINCETON, NJ 08540 USA
Telephone: +1-973-357-3193

1.4 Emergency telephone

FOR EMERGENCIES INVOLVING A SPILL, LEAK, FIRE, EXPOSURE OR ACCIDENT, CONTACT CHEMTREC (24-Hour Number): 800-424-9300 within the United States and Canada, or 703-527-3887 for international collect calls.

Disclaimer

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SECTION 2: Hazards identification

Although OSHA has not adopted the environmental portion of the GHS regulations, this document may include information on environmental effects.

2.1 Classification of the substance or mixture**HCS 2012 (29 CFR 1910.1200)**

Flammable liquids, Category 3
Eye irritation, Category 2A
Specific target organ toxicity - single exposure,
Category 3

H226: Flammable liquid and vapor.
H319: Causes serious eye irritation.
H335: May cause respiratory irritation. (Respiratory system)

2.2 Label elements**HCS 2012 (29 CFR 1910.1200)****Pictogram****Signal Word**

- Warning

Hazard Statements

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- H226 Flammable liquid and vapor.
- H319 Causes serious eye irritation.
- H335 May cause respiratory irritation.

Precautionary StatementsPrevention

- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P233 Keep container tightly closed.
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P242 Use only non-sparking tools.
- P243 Take precautionary measures against static discharge.
- P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
- P264 Wash skin thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/ 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 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/ attention.
- P337 + P313 If eye irritation persists: 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.

2.3 Other hazards which do not result in classification

None identified

SECTION 3: Composition/information on ingredients**3.1 Substance**

- Chemical nature Mineral processing reagent

Hazardous Ingredients and Impurities

Chemical name	Identification number CAS-No.	Concentration [%]
2-Pentanol, 4-methyl-	108-11-2	98 - 100
4-Heptanone, 2,6-dimethyl-	108-83-8	<= 2
2-Pentanone, 4-methyl-	108-10-1	< 1.5

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

3.2 Mixture

- Not applicable, this product is a substance.

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SECTION 4: First aid measures**4.1 Description of first-aid measures****In case of inhalation**

- Quickly move the person away from the contaminated area. Make the affected person rest.
- Always obtain medical attention.
- Show this sheet to the doctor.
- Be prepared to provide first aid or medical support if necessary.

In case of skin contact

- Wash off immediately with plenty of water for at least 15 minutes.
- Use appropriate protective equipment when treating a contaminated person.
- Always obtain medical attention.
- Show this sheet to the doctor.
- Be prepared to provide first aid or medical support if necessary.

In case of eye contact

- Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.
- Keep eye wide open while rinsing.
- Show this sheet to the doctor.
- Always obtain medical advice, even if there are no symptoms.
- Be prepared to provide first aid or medical support if necessary.

In case of ingestion

- Do NOT induce vomiting.
- Obtain medical attention.
- Show this sheet to the doctor.
- Do not give anything to drink.
- Be prepared to provide first aid or medical support if necessary.

4.2 Most important symptoms and effects, both acute and delayed**Effects**

- Effects on health may appear after exposure.
- The effects will depend on target organs.
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
- respiratory tract irritation
- Risk of respiratory disorder
- bronchitis
- Nose bleeding
- Chemical pneumonitis
- pulmonary edema
- May cause skin damage.
- Chronic exposure may cause dermatitis.
- May cause irreversible eye damage.
- Loss of the eye

Symptoms

- Symptoms will depend on the target organs.
- Inhalation may provoke the following symptoms:
- Cough
- Breathing difficulties
- Irritation
- Redness
- Swelling of tissue
- Ingestion may provoke the following symptoms:
- Nausea

- Diarrhea
- Abdominal pain
- Asphyxia
- Unconsciousness
- May cause respiratory tract irritation.
- Dermatitis
- Causes skin burns.
- Lachrymation
- Conjunctivitis
- Causes eye burns.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician

- Be aware to maintain life support if necessary.
- Take victim to hospital if symptoms persist.
- Get medical advice/ attention.
- Consult with an ophthalmologist if eye symptoms persist.
- Burns must be treated by a physician.
- Treat symptomatically.
- Contact a poison control center.
- Keep under medical follow up for at least 48 hours.

SECTION 5: Firefighting measures

Flash point

106 °F (41 °C)
closed cup

Autoignition temperature

680.5 °F (360.3 °C)

Flammability / Explosive limit

Lower flammability/explosion limit : 1.00 %(V)

Upper flammability/explosion limit : 5.50 %(V)

5.1 Extinguishing media

Suitable extinguishing media

- Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Unsuitable extinguishing media

- High volume water jet

5.2 Special hazards arising from the substance or mixture

- Under fire conditions:
- Will burn
- On combustion, toxic gases are released.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

- In the event of fire, wear self-contained breathing apparatus.
- Personal protective equipment comprising: suitable protective gloves, safety goggles and protective clothing
- For further information refer to section 8 "Exposure controls / personal protection."

Specific fire fighting methods

- Cool containers/tanks with water spray.
- Do not use a solid water stream as it may scatter and spread fire.

Further information

- Standard procedure for chemical fires.
- Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
- Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

- Where exposure level is not known, wear approved, positive pressure, self-contained respirator.
- Where exposure level is known, wear approved respirator suitable for level of exposure.
- In addition to the protective clothing/equipment in Section 8 (Exposure Controls/Personal Protection), wear impermeable boots.

6.2 Environmental precautions

- Stop the leak. Turn leaking containers leak-side up to prevent the escape of liquid.
- Contain the spilled material by diking.
- Do not let product enter drains.
- Do not allow uncontrolled discharge of product into the environment.

- Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

6.3 Methods and materials for containment and cleaning up

- Remove all sources of ignition.
- Stop leak if safe to do so.
- Keep in properly labeled containers.
- Keep in suitable, closed containers for disposal.
- Wash nonrecoverable remainder with large amounts of water.
- Soak up with inert absorbent material and dispose of as hazardous waste.
- Decontaminate tools, equipment and personal protective equipment in a segregated area.
- Dispose of in accordance with local regulations.
- Never return spills in original containers for re-use.

6.4 Reference to other sections

- 7. HANDLING AND STORAGE
- 8. EXPOSURE CONTROLS/PERSONAL PROTECTION
- 13. DISPOSAL CONSIDERATIONS

SECTION 7: Handling and storage**7.1 Precautions for safe handling**

- Containers must be bonded and grounded when pouring or transferring material.
- This material contains a flammable or combustible liquid and vapor.

Hygiene measures

- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.
- Ensure that eyewash stations and safety showers are close to the workstation location.

7.2 Conditions for safe storage, including any incompatibilities**Technical measures/Storage conditions**

- Observe the general rules of industrial fire protection.
- Areas containing this material should have fire safe practices and electrical equipment in accordance with applicable regulations and/or guidelines. Standards are primarily based on the material's flashpoint, but may also take into account properties such as miscibility with water or toxicity. All local and national regulations should be followed. In the Americas, National Fire Protection Association (NFPA) 30: Flammable and Combustible Liquids Code, is a widely used standard. NFPA 30 establishes storage conditions for the following classes of materials: Class I Flammable Liquids, Flashpoint <37.8 °C. Class II Combustible Liquids, 37.8 °C < Flashpoint <60 °C. Class IIIa Combustible Liquids, 60 °C < Flashpoint < 93 °C. Class IIIb Combustible Liquids, Flashpoint > 93 °C.
- Keep away from sources of ignition - No smoking.

Requirements for storage rooms and vessels

Recommended storage temperature: 68 °F (20 °C)

- Keep away from sources of ignition - No smoking.
- Mixture may charge electrostatically: always use grounding leads when transferring from one container to another.
- To guarantee safety keep according to Storage temperature and conditions.

7.3 Specific end use(s)

- no data available

SECTION 8: Exposure controls/personal protection

Introductory Remarks: These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. Assistance with selection, use and maintenance of worker protection equipment is generally available from equipment manufacturers.

8.1 Control parameters**Components with workplace occupational exposure limits**

Components	Value type	Value	Basis
2-Pentanol, 4-methyl-	TWA	25 ppm 100 mg/m3	National Institute for Occupational Safety and Health
		Potential for dermal absorption	
2-Pentanol, 4-methyl-	ST	40 ppm 165 mg/m3	National Institute for Occupational Safety and Health
		Potential for dermal absorption	
2-Pentanol, 4-methyl-	TWA	25 ppm	American Conference of Governmental Industrial Hygienists
		Danger of cutaneous absorption	

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2-Pentanol, 4-methyl-	STEL	40 ppm	American Conference of Governmental Industrial Hygienists
	Danger of cutaneous absorption		
2-Pentanol, 4-methyl-	TWA	25 ppm 100 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	Skin designation, The value in mg/m3 is approximate.		
2-Pentanol, 4-methyl-	PEL	25 ppm 100 mg/m3	
	Skin		
2-Pentanol, 4-methyl-	STEL	40 ppm 165 mg/m3	
	Skin		
4-Heptanone, 2,6-dimethyl-	TWA	25 ppm 150 mg/m3	National Institute for Occupational Safety and Health
4-Heptanone, 2,6-dimethyl-	TWA	25 ppm	American Conference of Governmental Industrial Hygienists
4-Heptanone, 2,6-dimethyl-	TWA	50 ppm 290 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.		
4-Heptanone, 2,6-dimethyl-	PEL	25 ppm 150 mg/m3	
2-Pentanone, 4-methyl-	TWA	50 ppm 205 mg/m3	National Institute for Occupational Safety and Health
2-Pentanone, 4-methyl-	ST	75 ppm 300 mg/m3	National Institute for Occupational Safety and Health
2-Pentanone, 4-methyl-	TWA	20 ppm	American Conference of Governmental Industrial Hygienists
2-Pentanone, 4-methyl-	STEL	75 ppm	American Conference of Governmental Industrial Hygienists
2-Pentanone, 4-methyl-	TWA	100 ppm 410 mg/m3	Occupational Safety and Health Administration - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.		
2-Pentanone, 4-methyl-	PEL	50 ppm 205 mg/m3	

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2-Pentanone, 4-methyl-	STEL	75 ppm 300 mg/m ³	
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NIOSH IDLH (Immediately Dangerous to Life or Health Concentrations)

Components	CAS-No.	Concentration
2-Pentanol, 4-methyl-	108-11-2	400 ppm
4-Heptanone, 2,6-dimethyl-	108-83-8	500 ppm
2-Pentanone, 4-methyl-	108-10-1	500 ppm

Biological Exposure Indices

Components	Value type	Value	Basis
2-Pentanone, 4-methyl-	BEI	1 mg/l methyl isobutyl ketone Urine End of shift (As soon as possible after exposure ceases)	American Conference of Governmental Industrial Hygienists

8.2 Exposure controls**Control measures****Engineering measures**

- Ensure adequate ventilation.
- Apply technical measures to comply with the occupational exposure limits.

Individual protection measures**Respiratory protection**

- Self-contained breathing apparatus in confined spaces/insufficient oxygen/in case of large uncontrolled emissions/in all circumstances when the mask and cartridge do not give adequate protection.
- Use only respiratory protection that conforms to international/ national standards.
- Respirator with a vapor filter (EN 141)
- Respirator with a full face mask.
- Use the indicated respiratory protection if the occupational exposure limit is exceeded.

Hand protection

- Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact).
- Impervious gloves

Eye protection

- Chemical resistant goggles must be worn.
- Tightly fitting safety goggles

Skin and body protection

- Impervious clothing
- Change working clothes after each work-shift.
- Contaminated work clothing should not be allowed out of the workplace.

Hygiene measures

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- Handle in accordance with good industrial hygiene and safety practice.
- Wash hands before breaks and at the end of workday.
- When using do not eat, drink or smoke.
- Eye wash bottles or eye wash stations in compliance with applicable standards.
- Ensure that eyewash stations and safety showers are close to the workstation location.

SECTION 9: Physical and chemical properties

Physical and Chemical properties here represent typical properties of this product. Contact the business area using the Product information phone number in Section 1 for its exact specifications.

9.1 Information on basic physical and chemical properties

<u>Appearance</u>	<u>Physical state:</u> liquid <u>Color:</u> colorless to white
<u>Odor</u>	mild
<u>Odor Threshold</u>	No data available
<u>Molecular weight</u>	102 g/mol
<u>pH</u>	No data available
<u>Melting point/freezing point</u>	<u>Melting point/range:</u> -195 °F (-126 °C)
<u>Initial boiling point and boiling range</u>	<u>Boiling point/boiling range:</u> 270 °F (132 °C)
<u>Flash point</u>	106 °F (41 °C) closed cup
<u>Evaporation rate (Butylacetate = 1)</u>	0.26 - 0.43
<u>Flammability (solid, gas)</u>	No data available
<u>Flammability (liquids)</u>	No data available
<u>Flammability / Explosive limit</u>	<u>Lower flammability/explosion limit:</u> Type: Lower flammability limit 1.00 %(V) <u>Upper flammability/explosion limit:</u> Type: Upper flammability limit 5.50 %(V)
<u>Autoignition temperature</u>	680.5 °F (360.3 °C)
<u>Vapor pressure</u>	3.7 - 4.7 mmHg (4.93 - 6.27 hPa) (68 °F (20 °C))
<u>Vapor density</u>	3.5 (Air = 1.0)
<u>Density</u>	0.81 g/cm ³ (68 °F (20 °C))

<u>Relative density</u>	No data available
<u>Solubility</u>	<u>Water solubility:</u> 17 - 18.2 g/l (68 °F (20 °C))soluble
<u>Partition coefficient: n-octanol/water</u>	Not applicable
<u>Decomposition temperature</u>	No data available
<u>Viscosity</u>	<u>Viscosity, dynamic :</u> 5.2 mPa.s (68 °F (20 °C)) <u>Viscosity, kinematic :</u> 6.4 mm ² /s (68 °F (20 °C))
<u>Explosive properties</u>	No data available
<u>Oxidizing properties</u>	Not considered as oxidizing.

9.2 Other information

<u>Corrosion of Metals</u>	Not corrosive to metals.
<u>Peroxides</u>	The substance or mixture is not classified as organic peroxide.

SECTION 10: Stability and reactivity

10.1 Reactivity

- no data available

10.2 Chemical stability

- Stable

10.3 Possibility of hazardous reactions

- no data available

10.4 Conditions to avoid

- Keep away from flames and sparks.
- To avoid thermal decomposition, do not overheat.

10.5 Incompatible materials

- Acids
- Oxidizing agents

10.6 Hazardous decomposition products

- Thermal decomposition**
 - Carbon oxides

SECTION 11: Toxicological information**11.1 Information on toxicological effects****Acute toxicity****Acute oral toxicity**

2-Pentanol, 4-methyl-

LD50 : 2,590 mg/kg - Rat , male and female
Method: OECD Test Guideline 401
The product has a low acute toxicity
May be harmful if swallowed.
Published data

Acute inhalation toxicity

2-Pentanol, 4-methyl-

LC50 - 4 h (vapor) : > 16 mg/l - Rat , male and female
Method: OECD Test Guideline 403
The product has a low acute toxicity
May be harmful if inhaled.
Unpublished reports

Acute dermal toxicity

2-Pentanol, 4-methyl-

LD50 : 2,870 mg/kg - Rat , male and female
Method: OECD Test Guideline 402
The product has a low acute toxicity
Occlusive
May be harmful in contact with skin.
Unpublished reports

Acute toxicity (other routes of administration)

No data available

Skin corrosion/irritation

2-Pentanol, 4-methyl-

Rabbit
Mild skin irritation
Method: OECD Test Guideline 404
Semioclusive
Unpublished reports

Serious eye damage/eye irritation

2-Pentanol, 4-methyl-

Rabbit
Irritation to eyes, reversing within 21 days
Method: OECD Test Guideline 405
Unpublished reports

Respiratory or skin sensitization

2-Pentanol, 4-methyl-

Maximization Test - Guinea pig
Does not cause skin sensitization.
Method: OECD Test Guideline 406
Unpublished reports

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Mutagenicity**Genotoxicity in vitro**

2-Pentanol, 4-methyl-

Ames test
with and without metabolic activationnegative
Method: OECD Test Guideline 471
Unpublished reportsChromosome aberration test in vitro
Strain: rat hepatocytes
without metabolic activationnegative
Method: OECD Test Guideline 473
Unpublished reportsGene mutation assays in mammalian cells.
Strain: mouse lymphoma cells
with and without metabolic activationnegative
Method: OECD Test Guideline 476
Unpublished reports**Genotoxicity in vivo**

No data available

Carcinogenicity

No data available

Components	CAS-No.	Rating	Basis
2-Pentanone, 4-methyl-	108-10-1	Group 2B: Possibly carcinogenic to humans	IARC

This product does not contain any ingredient designated as probable or suspected human carcinogens by:

NTP
OSHA**Toxicity for reproduction and development****Toxicity to reproduction / fertility**

2-Pentanol, 4-methyl-

By analogy

Two-generation reproductive toxicity - Rat, male and female, inhalation (vapor)
Method: OECD Test Guideline 416
no impairment of fertility has been observed, Published data**Developmental Toxicity/Teratogenicity**

2-Pentanol, 4-methyl-

By analogy

Rat, female, inhalation (vapor)
Method: OECD Test Guideline 414
no teratogenic effects have been observed, Published data

By analogy

Mouse, female, inhalation (vapor)
Method: OECD Test Guideline 414
no teratogenic effects have been observed, Published data

STOT

STOT-single exposure

2-Pentanol, 4-methyl-

Target Organs: Respiratory Tract
The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation according to GHS criteria.

STOT-repeated exposure

2-Pentanol, 4-methyl-

By analogy

Oral - Rat , male and female
Method: OECD Test Guideline 422
Effects on the kidney not relevant for humans.
Not considered to cause serious damage to health on repeated exposure
Unpublished reports

Inhalation (vapor) Repeated exposure - Rat , male and female
Not considered to cause serious damage to health on repeated exposure
Unpublished reports

By analogy

Inhalation (vapor) 2 y - Rat , male and female
Method: OECD Test Guideline 451
Effects on the kidney not relevant for humans.
Not considered to cause serious damage to health on repeated exposure
Unpublished reports

Experience with human exposure

No data available

Experience with human exposure : Inhalation

2-Pentanol, 4-methyl-

Vapor during processing may be irritating to the respiratory tract and to the eyes.

Aspiration toxicity

No data available

SECTION 12: Ecological information

12.1 Toxicity

Aquatic Compartment

Acute toxicity to fish

LC50 - 96 h : > 100 mg/l - Oncorhynchus mykiss (rainbow trout)
static test
Method: OECD Test Guideline 203
Published data

Acute toxicity to daphnia and other aquatic invertebrates	EC50 - 48 h : 710 mg/l - Daphnia magna (Water flea) static test Method: OECD Test Guideline 202 Published data
Toxicity to aquatic plants	The product itself has not been tested.
Toxicity to microorganisms 2-Pentanol, 4-methyl-	EC50 - 3 h : > 100 mg/l - activated sludge static test Analytical monitoring: no Method: OECD Test Guideline 209 Fresh water Unpublished reports
4-Heptanone, 2,6-dimethyl-	EC50 - 16 h : 255 mg/l - Bacteria static test Analytical monitoring: no Endpoint: Growth inhibition Unpublished reports Freshwater species
2-Pentanone, 4-methyl-	EC50 - 3 h : > 1,000 mg/l - activated sludge static test Analytical monitoring: no Method: OECD Test Guideline 209 Unpublished reports
Chronic toxicity to fish	No data available
Chronic toxicity to daphnia and other aquatic invertebrates	
2-Pentanol, 4-methyl-	By analogy NOEC: 30 mg/l - 21 Days - Daphnia magna (Water flea) semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 Fresh water Unpublished reports No adverse chronic effect observed up to and including the threshold of 1 mg / L.
2-Pentanone, 4-methyl-	NOEC: 30 mg/l - 21 Days - Daphnia magna (Water flea) semi-static test Analytical monitoring: yes Method: OECD Test Guideline 211 Unpublished reports

12.2 Persistence and degradability**Abiotic degradation**

No data available

Physical- and photo-chemical elimination

No data available

Biodegradation**Biodegradability**

> 70 % - 28 Days

Degradability assessment

2-Pentanol, 4-methyl-

The product is considered to be rapidly degradable in the environment

4-Heptanone, 2,6-dimethyl-

The product is considered to be rapidly degradable in the environment

12.3 Bioaccumulative potential**Partition coefficient: n-octanol/water**

2-Pentanol, 4-methyl-

Not potentially bioaccumulable

4-Heptanone, 2,6-dimethyl-

Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

2-Pentanone, 4-methyl-

Not potentially bioaccumulable

Bioconcentration factor (BCF)

No data available

12.4 Mobility in soil**Adsorption potential (Koc)**

2-Pentanol, 4-methyl-

Koc: 12.95
Log Koc: 1.11
Method: Calculation method
Unpublished reports

4-Heptanone, 2,6-dimethyl-

Adsorption
Soil
Log Koc: 2.07
Method: OECD Test Guideline 121
Moderately mobile in soils
Unpublished reports

2-Pentanone, 4-methyl-

Koc: 101.85
Structure-activity relationship (SAR)
Unpublished reports**Known distribution to environmental compartments**

2-Pentanone, 4-methyl-

Ultimate destination of the product: Water
Structure-activity relationship (SAR)

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12.5 Results of PBT and vPvB assessment

4-Heptanone, 2,6-dimethyl-	Not classified as PBT substance. Not classified as vPvB.
2-Pentanone, 4-methyl-	This substance is not considered to be persistent, bioaccumulating, and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulating (vPvB).

12.6 Other adverse effects**Ecotoxicity assessment****Short-term (acute) aquatic hazard**

2-Pentanol, 4-methyl-	Not harmful to aquatic life (LC/LL50, EC/EL50 > 100 mg/L)
4-Heptanone, 2,6-dimethyl-	Harmful to aquatic life.
2-Pentanone, 4-methyl-	This product has no known ecotoxicological effects.

Long-term (chronic) aquatic hazard

2-Pentanol, 4-methyl-	No adverse chronic effect observed up to and including the threshold of 1 mg / L.
4-Heptanone, 2,6-dimethyl-	No adverse chronic effect observed up to and including the threshold of 1 mg / L.
2-Pentanone, 4-methyl-	Does not have any known long term adverse effects on the aquatic organisms tested

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product Disposal**

- The Company encourages the recycle, recovery and reuse of materials, where permitted. If disposal is necessary, The Company recommends that organic materials, especially when classified as hazardous waste, be disposed of by thermal treatment or incineration at approved facilities. All local and national regulations should be followed.

SECTION 14: Transport information

Transportation status: IMPORTANT! Statements below provide additional data on listed transport classification. The listed Transportation Classification does not address regulatory variations due to changes in package size, mode of shipment or other regulatory descriptors.

DOT

14.1 UN number	UN 2053
14.2 Proper shipping name	METHYL ISOBUTYL CARBINOL
14.3 Transport hazard class	3
Label(s)	3
14.4 Packing group	
Packing group	III

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ERG No 129

14.5 Environmental hazards
Marine pollutant NO

TDG

14.1 UN number UN 2053

14.2 Proper shipping name METHYL ISOBUTYL CARBINOL

14.3 Transport hazard class 3
 Label(s) 3

14.4 Packing group
 Packing group III
 ERG No 129

14.5 Environmental hazards
Marine pollutant NO

NOM

14.1 UN number UN 2053

14.2 Proper shipping name METHYL ISOBUTYL CARBINOL

14.3 Transport hazard class 3
 Label(s) 3

14.4 Packing group
 Packing group III
 ERG No 129

14.5 Environmental hazards
Marine pollutant NO

IMDG

14.1 UN number UN 2053

14.2 Proper shipping name METHYL ISOBUTYL CARBINOL
 IMDG Code segregation group Not Relevant

14.3 Transport hazard class 3
 Label(s) 3

14.4 Packing group
 Packing group III

14.5 Environmental hazards
Marine pollutant NO

14.6 Special precautions for user

EmS F-E , S-D

For personal protection see section 8.

14.7 Transport in bulk vessels according to IMO instruments

No data available

IATA**14.1 UN number** UN 2053**14.2 Proper shipping name** METHYL ISOBUTYL CARBINOL**14.3 Transport hazard class** 3
Label(s): 3**14.4 Packing group**
Packing group IIIPacking instruction (cargo aircraft) 366
Max net qty / pkg 220.00 L
Packing instruction (passenger aircraft) 355
Max net qty / pkg 60.00 L**14.5 Environmental hazards** NO**14.6 Special precautions for user**

For personal protection see section 8.

Note: The above regulatory prescriptions are those valid on the date of publication of this sheet. Given the possible evolution of transportation regulations for hazardous materials, it would be advisable to check their validity with your sales office.

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SECTION 15: Regulatory information**15.1 Notification status**

Inventory Information	Status
United States TSCA Inventory	- All substances listed as active on the TSCA inventory
EU. European Registration, Evaluation, Authorisation and Restriction of Chemical (REACH)	- When purchased from a Solvay legal entity based in the EEA ("European Economic Area"), this product is compliant with the registration provisions of the REACH Regulation (EC) No. 1907/2006 as all its components are either excluded, exempt, and/or registered. When purchased from a legal entity outside of the EEA, please contact your local representative for additional information.
Canadian Domestic Substances List (DSL)	- Listed on Inventory
Australia Inventory of Chemical Substances (AICS)	- Listed on Inventory
Japan. CSCL - Inventory of Existing and New Chemical Substances	- Listed on Inventory
Korea. Korean Existing Chemicals Inventory (KECI)	- Listed on Inventory
China. Inventory of Existing Chemical Substances in China (IECSC)	- Listed on Inventory
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	- Listed on Inventory
Taiwan Chemical Substance Inventory (TCSI)	- Listed on Inventory
New Zealand. Inventory of Chemical Substances	- All components are listed on the NZIOC inventory. The HSNO status of the product has not been assessed.

15.2 Federal Regulations**US. EPA EPCRA SARA Title III****SARA HAZARD DESIGNATION SECTIONS 311/312 (40 CFR 370)**

Flammable (gases, aerosols, liquids, or solids)	Yes
Serious eye damage or eye irritation	Yes
Specific target organ toxicity (single or repeated exposure)	Yes

The categories not mentioned are not relevant for the product.

Section 313 Toxic Chemicals (40 CFR 372.65)

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

Components	CAS-No.	Concentration
2-Pentanone, 4-methyl-	108-10-1	< 1.5%

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Section 302 Emergency Planning Extremely Hazardous Substance Threshold Planning Quantity (40 CFR 355)

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

Section 302 Emergency Planning Extremely Hazardous Substance Reportable Quantity (40 CFR 355)

This material does not contain any components with a SARA 302 RQ.

Section 304 Emergency Release Notification Reportable Quantity (40 CFR 355)

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

US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)

Components	CAS-No.	Reportable quantity
2-Pentanone, 4-methyl-	108-10-1	5000 lb

15.3 State Regulations**US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)**

Please contact your local sales representative if you have questions and need more information concerning this product under California's Proposition 65 statute (www.p65warnings.ca.gov).

SECTION 16: Other information**NFPA (National Fire Protection Association) - Classification**

Health	2 moderate
Flammability	2 moderate
Instability or Reactivity	0 minimal

Date Prepared: 08/08/2019**Key or legend to abbreviations and acronyms used in the safety data sheet**

- PEL	Permissible exposure limit
- ST	STEL - 15-minute TWA exposure that should not be exceeded at any time during a workday
- STEL	Short term exposure limit
- TWA	8-hour, time-weighted average
- ACGIH	American Conference of Governmental Industrial Hygienists
- OSHA	Occupational Safety and Health Administration
- NTP	National Toxicology Program
- IARC	International Agency for Research on Cancer
- NIOSH	National Institute for Occupational Safety and Health

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information, and belief at the date of its publication. Such information is only given as a guidance to help the user handle, use, process, store, transport, dispose, and release the product in satisfactory safety conditions and is not to be considered as a warranty or quality specification. It should be used in conjunction with technical sheets but do not replace them. Thus, the information only relates to the designated specific product and may not be applicable if such product is used in combination with other materials or in any other manufacturing process, unless otherwise specifically indicated. It does not release the user from ensuring he is in conformity with all regulations linked to its activity.