We create chemistry

Safety data sheet

1. Identification of the chemical and of the supplier

3-METHYLBUTANOL-1

Chemical name: 3-methylbutan-1-ol
CAS Number: 123-51-3

Use: process chemical, solvent(s)

Manufacturer/supplier:
BASF (Malaysia) Sdn Bhd
Lot 19.02 Level 19, 1 Powerhouse
No 1 Persiaran Bandar Utama
47800 Petaling Jaya
Selangor D.E, MALAYSIA
Telephone: +60 3 7612 1888
Telefax number: +60 3 7612 1777

Emergency information:
National emergency number:
+603 7612 1999
International emergency number:
Telephone: +49 180 2273-112

2. Hazard identification

Classification of the substance and mixture:
Flammable liquids: Cat. 3
Acute toxicity: Cat. 4 (Inhalation - vapour)
Skin corrosion/irritation: Cat. 2
Serious eye damage/eye irritation: Cat. 2
Specific target organ toxicity — single exposure: Cat. 3 (irritating to respiratory system)

Label elements and precautionary statement:

Pictogram:

Signal Word:
Warning

Hazard Statement:
Flammable liquid and vapour. Causes serious eye irritation. Causes skin irritation. Harmful if inhaled. May cause respiratory irritation.

Precautionary Statements (Prevention):
Use only outdoors or in a well-ventilated area. Wear protective gloves and eye/face protection. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Do not breathe dust/gas/mist/vapours. Take precautionary measures against static discharge. Use explosion-proof electrical/ventilating/lighting/equipment. Wash with plenty of water and soap thoroughly after handling. Use only non-sparking tools. Ground/bond container and receiving equipment.

Precautionary Statements (Response):
Call a POISON CENTER or doctor/physician if you feel unwell. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. IF ON SKIN (or hair): Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. If eye irritation persists: Call a POISON CENTER or doctor/physician. Take off contaminated clothing and wash it before reuse. In case of fire: Use… to extinguish.

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

Precautionary Statements (Disposal):
Dispose of contents/container to hazardous or special waste collection point.

Other hazards which do not result in classification:
If applicable information is provided in this section on other hazards which do not result in classification but which may contribute to the overall hazards of the substance or mixture.
See section 12 - Results of PBT and vPvB assessment.

Repeated exposure may cause skin dryness or cracking.

3. Composition/information on ingredients

Chemical nature

3-methylbutan-1-ol
CAS Number: 123-51-3

Hazardous ingredients

pentan-1-ol

Content (W/W): <= 1 %	Flam. Liq.: Cat. 3
CAS Number: 71-41-0	Skin Corr./Irrit.: Cat. 2
	Eye Dam./Irrit.: Cat. 1
	STOT SE: Cat. 3 (irr. to respiratory syst.)

For the classifications not written out in full in this section the full text can be found in section 16.

4. First-Aid Measures

General advice:
Remove contaminated clothing. If danger of loss of consciousness, place patient in recovery position and transport accordingly. Apply artificial respiration if necessary. First aid personnel should pay attention to their own safety.

If inhaled:
Keep patient calm, remove to fresh air, seek medical attention.

On skin contact:
Wash thoroughly with soap and water. Consult a doctor if skin irritation persists.

On contact with eyes:
Immediately wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

On ingestion:
Rinse mouth immediately and then drink plenty of water, seek medical attention.

Note to physician:
Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.
Note to physician:
Treatment: Symptomatic treatment (decontamination, vital functions).

5. Fire-Fighting Measures

Suitable extinguishing media:
water spray, alcohol-resistant foam, dry powder, carbon dioxide

Specific hazards:
The product is combustible. Cool endangered containers with water-spray.

Special protective equipment:
Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:
Collect contaminated extinguishing water separately, do not allow to reach sewage or effluent systems.

6. Accidental Release Measures

Personal precautions:
Breathing protection required. Avoid contact with skin and eyes.

Environmental precautions:
Do not discharge into the subsoil/soil. Do not discharge into drains/surface waters/groundwater.

Methods for cleaning up or taking up:
For large amounts: Pump off product.
For residues: Pick up with suitable absorbent material. Dispose of contaminated material as prescribed.

7. Handling and Storage

Handling

Ensure thorough ventilation of stores and work areas.

Protection against fire and explosion:
Take precautionary measures against static discharges. Sources of ignition should be kept well clear.

Storage

Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

8. Exposure controls and personal protection

Components with occupational exposure limits

3-methylbutan-1-ol, 123-51-3;
TWA value 100 ppm (ACGIHTLV)
STEL value 125 ppm (ACGIHTLV)
TWA value 361 mg/m3 ; 100 ppm (OEL (MY))

Personal protective equipment

Respiratory protection:
Wear respiratory protection if ventilation is inadequate. Gas filter for gases/vapours of organic compounds (boiling point >65 °C, e. g. EN 14387 Type A)

Hand protection:
Chemical resistant protective gloves (EN 374)
Suitable materials also with prolonged, direct contact (Recommended: Protective index 6, corresponding > 480 minutes of permeation time according to EN 374):
nitrile rubber (NBR) - 0.4 mm coating thickness
Manufacturer's directions for use should be observed because of great diversity of types.
Supplementary note: The specifications are based on tests, literature data and information of glove manufacturers or are derived from similar substances by analogy. Due to many conditions (e.g. temperature) it must be considered, that the practical usage of a chemical-protective glove in practice may be much shorter than the permeation time determined through testing.

Eye protection:
Tightly fitting safety goggles (splash goggles) (e.g. EN 166)

Body protection:
Body protection must be chosen depending on activity and possible exposure, e.g. apron, protecting boots, chemical-protection suit (according to EN 14605 in case of splashes or EN ISO 13982 in case of dust).

General safety and hygiene measures:
Avoid contact with the skin, eyes and clothing. Avoid inhalation of vapour. Wearing of closed work clothing is required additionally to the stated personal protection equipment.

9. Physical and Chemical Properties

Form:	liquid	
Colour:	colourless	
Odour:	offensive	
Odour threshold:	not determined	
pH value:	6.5	(internal method)
glass transition temperature:	-147 °C	(measured)
Boiling point:	130.7 °C (1,013.25 hPa)	(measured)
Flash point:	43.5 °C	(DIN EN ISO 13736, closed cup)
Evaporation rate:	Value can be approximated from Henry's Law Constant or vapor pressure.	
Flammability (solid/gas):	Flammable.	(other)
Lower explosion limit:	1.0 %(V) (37.4 °C) For liquids not relevant for classification and labelling.	(air)
Upper explosion limit:	For liquids not relevant for classification and labelling.	

Ignition temperature:	335 °C	(DIN 51794)
Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.	
Self ignition:	not self-igniting	Test type: Spontaneous self-ignition at room-temperature. (Method: other)
Explosion hazard:	Based on the chemical structure there is no indicating of explosive properties.	(other)
Fire promoting properties:	Based on its structural properties the product is not classified as oxidizing.	(other)
Vapour pressure:	3 hPa (20 °C) dynamic	(measured)
Density:	0.8080 g/cm3 (20 °C)	(DIN 53217-5)
Relative vapour density (air):	not determined	
Solubility in water:	Literature data. (19.8 °C)	
Solubility (qualitative) solvent(s):	organic solvents soluble	
Partitioning coefficient n-octanol/water (log Pow):	1.35 (23 °C; pH value: approx. 6.5)	(measured)
Volatility/water - air:	The substance will slowly evaporate into the atmosphere from the water surface.	(calculated)
Adsorption/water - soil:	KOC: 5.32; log KOC: 0.73 Adsorption to solid soil phase is not expected.	(calculated)
Surface tension:	Based on chemical structure, surface activity is not to be expected.	
Viscosity, dynamic:	4.3 mPa.s (20 °C)	
Viscosity, kinematic:	5.36 mm2/s (20 °C)	(DIN 51562)
Molar mass:	88.15 g/mol	

10. Stability and Reactivity

Conditions to avoid:
No special precautions other than good housekeeping of chemicals.

Thermal decomposition:	No decomposition if stored and handled as prescribed/indicated.

Substances to avoid:
strong oxidizing agents

Corrosion to metals: No corrosive effect on metal.

Hazardous reactions:
No hazardous reactions if stored and handled as prescribed/indicated.

Hazardous decomposition products:
No hazardous decomposition products if stored and handled as prescribed/indicated.

11. Toxicological Information

Acute toxicity

Assessment of acute toxicity:
Virtually nontoxic after a single ingestion. The inhalation of a highly enriched/saturated vapor-air-mixture represents an unlikely acute hazard. Of low toxicity after short-term skin contact.

Experimental/calculated data:
LD50 rat (oral): > 5,000 mg/kg (BASF-Test)

LD50 rabbit (dermal): approx. 3,216 mg/kg (similar to OECD guideline 402)

Irritation

Assessment of irritating effects:
Skin contact causes irritation. Eye contact causes irritation.

Experimental/calculated data:
Skin corrosion/irritation rabbit: Irritant. (Draize test)

Serious eye damage/irritation rabbit: Irritant. (Draize test)

Respiratory/Skin sensitization

Assessment of sensitization:
Skin sensitizing effects were not observed in animal studies. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Experimental/calculated data:
Guinea pig maximization test guinea pig: Non-sensitizing. (similar to OECD guideline 406)

Germ cell mutagenicity

Assessment of mutagenicity:

The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in studies with mammals.

Carcinogenicity

Assessment of carcinogenicity:
A long-term carcinogenity study which does not meet the current requirements did not show a carcinogenic effect. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Reproductive toxicity

Assessment of reproduction toxicity:
The results of animal studies gave no indication of a fertility impairing effect. The results were determined in a Screening test (OECD 421/422). Repeated oral uptake of the substance did not cause damage to the reproductive organs.

Developmental toxicity

Assessment of teratogenicity:
No indications of a developmental toxic / teratogenic effect were seen in animal studies. No adverse effects on embryonic or fetal development were observed.

Specific target organ toxicity (single exposure):

Assessment of STOT single:
Causes temporary irritation of the respiratory tract.

Repeated dose toxicity and Specific target organ toxicity (repeated exposure)

Assessment of repeated dose toxicity:
No adverse effects were observed after repeated oral exposure in animal studies. No adverse effects were observed after repeated inhalative exposure in animal studies.

Aspiration hazard

not applicable

12. Ecological Information

Ecotoxicity

Assessment of aquatic toxicity:
There is a high probability that the product is not acutely harmful to aquatic organisms. The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Toxicity to fish:
LC50 (96 h) 700 mg/l, Salmo gairdneri, syn. O. mykiss (OECD 203; ISO 7346; 84/449/EEC, C.1, static)

Nominal concentration.

Aquatic invertebrates:
EC50 (48 h) 260 mg/l, Daphnia magna (DIN 38412 Part 11, static)
Nominal concentration.

Aquatic plants:
EC50 (72 h) 493 mg/l (growth rate), Scenedesmus subspicatus (DIN 38412 Part 9, static)
Nominal concentration.

Microorganisms/Effect on activated sludge:
EC10 (3 h) 370 mg/l, activated sludge, domestic (OECD Guideline 209, aerobic)
Nominal concentration. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Chronic toxicity to fish:
Study scientifically not justified.

Chronic toxicity to aquatic invertebrates:
Study scientifically not justified.

Assessment of terrestrial toxicity:
No data available concerning terrestrial toxicity.

Mobility

Assessment transport between environmental compartments:
The substance will slowly evaporate into the atmosphere from the water surface.
Adsorption to solid soil phase is not expected.

Persistence and degradability

Elimination information:
84 % BOD of COD (27 d) (OECD 301F; ISO 9408; 92/69/EEC, C.4-D) (aerobic, activated sludge, domestic) Biodegradable.

Assessment of stability in water:
According to structural properties, hydrolysis is not expected/probable.

Bioaccumulation potential

Assessment bioaccumulation potential:
Because of the n-octanol/water distribution coefficient (log Pow) accumulation in organisms is not to be expected.

Other adverse effects

Adsorbable organically-bound halogen (AOX):
This product contains no organically-bound halogen.

13. Disposal Considerations

Must be disposed of or incinerated in accordance with local regulations.

Contaminated packaging:
Contaminated packaging should be emptied as far as possible; then it can be passed on for recycling after being thoroughly cleaned.

14. Transport Information

Domestic transport:

Hazard class:	3
Packing group:	III
ID number:	UN 1105
Hazard label:	3
Proper shipping name:	PENTANOLS (contains 3-METHYLBUTAN-1-OL)

Further information
Hazchem Code:3Y
IERG Number:16

Sea transport
IMDG

Hazard class:	3
Packing group:	III
ID number:	UN 1105
Hazard label:	3
Marine pollutant:	NO
Proper shipping name:	PENTANOLS (contains 3-METHYLBUTAN-1-OL)

Air transport
IATA/ICAO

Hazard class:	3
Packing group:	III
ID number:	UN 1105
Hazard label:	3
Proper shipping name:	PENTANOLS (contains 3-METHYLBUTAN-1-OL)

Transport in bulk according to Annex II of MARPOL and the IBC Code

Regulation:	Not evaluated
Shipment approved:	Not evaluated
Pollution name:	Not evaluated
Pollution category:	Not evaluated
Ship Type:	Not evaluated

15. Regulatory Information

Program to investigate the potential hazards of high production volume chemicals (HPV), including decisions on the need for further work (OECD)
OECD High Production Volume Chemicals
listed

Other regulations

If other regulatory information applies that is not already provided elsewhere in this safety data sheet, then it is described in this subsection.

16. Other Information

Full text of classifications, hazard symbols and hazard statements, if mentioned in section 2 or 3:

Flam. Liq.	Flammable liquids
Skin Corr./Irrit.	Skin corrosion/irritation
Eye Dam./Irrit.	Serious eye damage/eye irritation
STOT SE	Specific target organ toxicity — single exposure

Vertical lines in the left hand margin indicate an amendment from the previous version.

The data contained in this safety data sheet are based on our current knowledge and experience and describe the product only with regard to safety requirements. The data do not describe the product's properties (product specification). Neither should any agreed property nor the suitability of the product for any specific purpose be deduced from the data contained in the safety data sheet. It is the responsibility of the recipient of the product to ensure any proprietary rights and existing laws and legislation are observed.