PIPERONYL BUTOXIDE CAS NO 51-03-6	MATERIAL SAFETY DATA SHEET SDS/MSDS

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifiers

Product name : Piperonyl Butoxide

CAS-No. : 51-03-6

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

Identified uses : Laboratory chemicals, Industrial & for professional use only.

1.3 Details of the supplier of the safety data sheet

Company : Central Drug House (P) Ltd
7/28 Vardaan House
New Delhi -110002
INDIA

Telephone : +91 11 49404040
Email : care@cdhfinechemical.com

1.4 Emergency telephone number

Emergency Phone # : +91 11 49404040 (9:00am - 6:00 pm) [Office hours]

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Acute aquatic toxicity (Category 1), H400
Chronic aquatic toxicity (Category 1), H410

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 Label elements

Labelling according Regulation (EC) No 1272/2008

Pictogram

Signal word: Warning

Hazard statement(s)
H410: Very toxic to aquatic life with long lasting effects.

Precautionary statement(s)
P273: Avoid release to the environment.
P501: Dispose of contents/ container to an approved waste disposal plant.

Supplemental Hazard Statements: none

2.3 Other hazards - none

SECTION 3: Composition/information on ingredients

3.1 Substances

Formula	:	$C_{19}H_{30}O_5$
Molecular weight	:	338.44 g/mol
CAS-No.	:	51-03-6
EC-No.	:	200-076-7

Hazardous ingredients according to Regulation (EC) No 1272/2008

Component		Classification	Concentration
2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether			
CAS-No.	51-03-6	Aquatic Acute 1; Aquatic Chronic 1; H400, H410 M-Factor - Aquatic Acute: 10	<= 100 %
EC-No.	200-076-7		

For the full text of the H-Statements mentioned in this Section, see Section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.

If inhaled
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

SECTION 5: Firefighting measures

5.1 Extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

No data available

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid breathing vapours, mist or gas. Ensure adequate ventilation.
For personal protection see section 8.

6.2 Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3 Methods and materials for containment and cleaning up
Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
For disposal see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Recommended storage temperature 2 - 8 °C
Storage class (TRGS 510): Combustible liquids not in Storage Class 3

7.3 Specific end use(s)
Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

8.2 Exposure controls

Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

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

Body Protection
Impervious clothing, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection
Respiratory protection not required. For nuisance exposures use type OV/AG (US) or type ABEK (EU EN 14387) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure
Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

a)	Appearance	Form: liquid Colour: light yellow
b)	Odour	No data available
c)	Odour Threshold	No data available
d)	pH	No data available

e)	Melting point/freezing point	Melting point/range: < -20 °C - OECD Test Guideline 102
f)	Initial boiling point and boiling range	180 °C at 1 hPa
g)	Flash point	171 °C - closed cup
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Upper/lower flammability or explosive limits	No data available
k)	Vapour pressure	No data available
l)	Vapour density	No data available
m)	Relative density	1.059 g/cm3
n)	Water solubility	0.0289 g/l at 20.4 °C - OECD Test Guideline 105 - slightly soluble
o)	Partition coefficient: n-octanol/water	log Pow: 4.8 at 20 °C
p)	Auto-ignition temperature	265 °C at 1,010 hPa
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	Not explosive
t)	Oxidizing properties	The product has been shown not to be oxidizing in a test following Directive 67/548/EEC (Method A17, Oxidizing properties).

9.2 Other safety information

Surface tension 35.79 mN/m at 25 °C

SECTION 10: Stability and reactivity

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

No data available

10.5 Incompatible materials

No data available

10.6 Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides
Other decomposition products - No data available
In the event of fire: see section 5

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - male and female - 5,630 mg/kg(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
(OECD Test Guideline 401)

LC50 Inhalation - Rat - male and female - 4 h - > 5.9 mg/l(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
LD50 Dermal - Rabbit - male and female - > 2,000 mg/kg(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
(OECD Test Guideline 402)

Skin corrosion/irritation
Skin - Rabbit(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation
Eyes - Rabbit(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
Result: No eye irritation - 168 h
(OECD Test Guideline 405)

Respiratory or skin sensitisation
Buehler Test - Guinea pig(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
Result: Does not cause skin sensitisation.

Germ cell mutagenicity
No data available(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
Ames test(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
S. typhimurium
Result: negative
(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
Mouse - male
Result: negative

Carcinogenicity

IARC: 3 - Group 3: Not classifiable as to its carcinogenicity to humans (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)

Reproductive toxicity

No data available(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)

Specific target organ toxicity - single exposure
No data available(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)

Specific target organ toxicity - repeated exposure
No data available

Aspiration hazard
No data available(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)

Additional Information

Repeated dose toxicity - Rat - male and female - Oral - No observed adverse effect level - 125 mg/kg - Lowest observed adverse effect level - 250 mg/kg(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
RTECS: XS8050000

Vomiting, Diarrhoea, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)

SECTION 12: Ecological information

12.1 Toxicity

Toxicity to fish	flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - ca. 6.12 mg/l - 96 h(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
Toxicity to daphnia and other aquatic invertebrates	flow-through test EC50 - Daphnia magna (Water flea) - ca. 0.05 mg/l - 48 h(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether) (OECD Test Guideline 202)
Toxicity to algae	Growth inhibition ErC50 - Pseudokirchneriella subcapitata (algae) - ca. 3.89 mg/l - 72 h(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether) (OECD Test Guideline 201)

Toxicity to bacteria	EC50 - Sludge Treatment - > 1,000 mg/l - 3 h(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether) (OECD Test Guideline 209)

12.2 Persistence and degradability

Biodegradability	aerobic - Exposure time 28 d(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether) Result: 24 - 48 % - Not readily biodegradable. (OECD Test Guideline 301B)

12.3 Bioaccumulative potential

Bioaccumulation	Lepomis macrochirus - 28 d (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether) Bioconcentration factor (BCF): 91 - 380

12.4 Mobility in soil

No data available(2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

Very toxic to aquatic life with long lasting effects.

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Offer surplus and non-recyclable solutions to a licensed disposal company.

Contaminated packaging

Dispose of as unused product.

SECTION 14: Transport information

14.1 UN number

ADR/RID: 3082	IMDG: 3082	IATA: 3082

14.2 UN proper shipping name

ADR/RID:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
IMDG:	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)
IATA:	Environmentally hazardous substance, liquid, n.o.s. (2-(2-Butoxyethoxy)ethyl 6-propylpiperonyl ether)

14.3 Transport hazard class(es)

ADR/RID: 9	IMDG: 9	IATA: 9

14.4 Packaging group

ADR/RID: III	IMDG: III	IATA: III

14.5 Environmental hazards

ADR/RID: yes	IMDG Marine pollutant: no	IATA: yes

14.6 Special precautions for user

Further information

EHS-Mark required (ADR 2.2.9.1.10, IMDG code 2.10.3) for single packagings and combination packagings containing inner packagings with Dangerous Goods > 5L for liquids or > 5kg for solids.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.2 Chemical safety assessment

For this product a chemical safety assessment was not carried out

SECTION 16: Other information

Full text of H-Statements referred to under sections 2 and 3.

H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Central Drug House (P) Ltd and its Affiliates shall not be held liable for any damage resulting from handling or from contact with the above product. See www.cdhfinechemical.com for additional terms and conditions of sale.