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

Catalogue Number	CS-O-10891
Product Name	Piperonyl Butoxide
CAS No.	51-03-6
Category	Pesticide Standards
Synonyms	-
Brand	Clearsynth Labs Ltd.
Identified uses	Laboratory Chemicals
Uses advised against	Not available
Company	Clearsynth Labs Ltd. Mumbai, India
Emergency Phone #	+91-22-245045900
REACH No.	Not available

SECTION 2: Hazards identification

Disclaimer: This is sample MSDS. Please email **sales@clearsynth.com** for more details.

2.1 Classification of the substance or mixture-Regulation (EC) No 1272/2008:

Serious eye damage/eye irritation (Category 2)

2.2 Label Elements

Signal Word: Warning

Hazard Statement(s)

Code	Statement
H319	Causes serious eye irritation.
H335	Not available
H400	Not available
H410	Not available

H317	May cause an allergic skin reaction.
H373	Not available

Precautionary Statement(s)

Code	Statement
P261	Avoid breathing dust/fume/gas/mist/vapours/spray.
P264+P265	Not available
P271	Use only outdoors or in a well-ventilated area.
P273	Not available
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if presen
P319	Get medical help if you feel unwell.
P337+P317	If eye irritation persists: Get medical help.
P391	Not available
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulatio
P260	Not available
P272	Not available
P302+P352	IF ON SKIN: Wash with plenty of water and soap.
P321	Specific treatment (see … on this label).
P333+P317	Not available
P362+P364	Take off contaminated clothing and wash it before reuse.

SECTION 3: Composition / information on ingredients

3.1 Substance

Component : Piperonyl Butoxide
CAS Number : 51-03-6
Molecular Formula : C■■H■■O■
Molecular Weight : 338.44
Parent Chemical : -

Synonyms : -
Concentration : Not available

SECTION 4: First aid measures

Not available

SECTION 5: Firefighting measures

Not available

SECTION 6: Accidental release measures

Not available

SECTION-7: Handling and storage

Not available

SECTION 8: Exposure controls / personal protection

Not available

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Test	Result
Appearance	Colour liquid
IR spectrum	No data available
pH	No data available
Solubility	In DMSO

Property	Value
a) Physical State	No data available
b) Color	No data available
c) Odor	No data available
d) pH	No data available

Property	Value
e) Vapour Pressure	No data available
f) Viscosity	No data available
g) Initial Boiling Point and boiling range	No data available
h) Melting Point / Freezing Point	No data available
i) Auto Ignition Temperature	No data available
j) Flash Point	No data available
k) Explosion Limit, Lower	No data available
l) Explosion Limit, Upper	No data available
m) Decomposition Temperature	No data available
n) Loss on Drying	No data available
o) Relative Density	No data available
p) Solubility (in DMSO)	No data available
q) Oxidizing Properties	No data available

SECTION 10: Stability and reactivity

Not available

SECTION 11: Toxicological information

11.1 Information on toxicological effects
- Acute toxicity: LC50 (rat) > 5,900 mg/m3 /HUMAN EXPOSURE STUDIES/ A single oral dose of 50 mg (about 0.71 mg/kg bw) piperonyl butoxide given to adult volunteers did not influence the metabolism of antipyrine, and no sign of toxicity was recorded.
- Skin corrosion/irritation: /SURVEILLANCE/ Based on data from Poison Control Centers, there appears to be a greater risk of moderate or major symptoms among those exposed to products containing pyrethrins and piperonyl butoxide than those exposed to pyrethrins alone. A detailed review of symptoms found that respiratory symptoms (bronchospasm, cough/choke, and dyspnea) and selected dermal symptoms (dermal irritation/pain, itching, and rash) were more likely if the exposure included piperonyl butoxide. These symptoms are likely the reason for increased risk of moderate effects which typically would require medical attention. Other literature suggests that pyrethrin-based products may pose a hazard to asthmatics ... The findings from analysis of symptoms from Poison Control Centers suggests that piperonyl butoxide adds to that risk. /LABORATORY ANIMALS: Acute Exposure/ Rabbits generally survive a single dermal application at the rate of 1880 mg/kg in the form of a 20% solution /of piperonyl butoxide/ in dimethyl phthalate; it causes no skin irritation but does cause hyperexcitability and convulsions ... .
- Serious eye damage/eye irritation: /LABORATORY ANIMALS: Acute Exposure/ Primary Eye Irritation, Minimally irritating, Category III. Primary Skin Irritation, Minimally irritating, Category III. Dermal Sensitization, Negative,

Category IV /from table/
- Respiratory or skin sensitization: /LABORATORY ANIMALS: Acute Exposure/ Primary Eye Irritation, Minimally irritating, Category III. Primary Skin Irritation, Minimally irritating, Category III. Dermal Sensitization, Negative, Category IV /from table/
- Germ cell mutagenicity: No data available.
- Carcinogenicity: PBO is classified as a Group C-possible human carcinogen with no cancer quantification required for PBO risk assessments. No data are available in humans. Inadequate evidence of carcinogenicity in animals. OVERALL EVALUATION: Group 3: The agent is not classifiable as to its carcinogenicity to humans.
- Reproductive toxicity: No data available.
- STOT-single exposure: No data available.
- STOT-repeated exposure: /BIRDS and MAMMALS/ PBO is practically nontoxic to birds on an acute basis. There were no mortalities observed at the highest concentration tested for acute oral (2250 mg/kg bw) or for the sub-acute dietary studies (5620 ppm). EPA did not calculate Reportable Quantities from the acute toxicity data because no mortality was seen at very high concentrations indicting minimal adverse acute effects to birds. From chronic avian toxicity data, a NOEC of 300 ppm was estimated from an avian reproduction study in which adult and hatchling body weight and food consumption, number of eggs laid, number of eggs cracked, and eggshell thickness effects were observed at the lowest observed effect concentration (LOEC) of 1200 ppm. /AQUATIC SPECIES/ Freshwater Fish. PBO is moderately toxic to freshwater fish on an acute basis (LC50 = 1.9 ppm). A no observed effect concentration (NOEC) of 0.04 ppm was estimated from a chronic early life stage of fish study with fathead minnow in which embryo survival at hatch and length and weight of larvae was observed at the lowest observed effect concentration (LOEC) of 0.11 ppm. Freshwater invertebrates. PBO ranges from moderately toxic (LC50 = 12.0 ppm) to highly toxic (LC50 = 0.51 ppm) to freshwater invertebrates on an acute basis. The species selected for RQ calculation was Daphnia magna with an LC50 of 0.51 ppm. A NOEC of 0.030 ppm was estimated from a chronic life cycle study where Daphnia magna exhibited reproduction affects at the lowest observed effect concentration (LOEC) of 0.047 ppm. Estuarine fish. PBO is moderately toxic (LC50 = 3.94 ppm) to estuarine/marine fish based on observed effects to sheepshead minnow on an acute basis. There are no chronic data available for estuarine fish. Estuarine/Marine invertebrates. PBO is highly toxic to estuarine invertebrates (LC50 = 0.49 ppm). There are no chronic data available for estuarine/marine invertebrates. Amphibians. PBO is highly toxic to amphibians on an acute basis (LC50 = 0.21 ppm).
- Aspiration hazard: No data available.

Likely routes of exposure
- No data available.

Symptoms related to the physical, chemical and toxicological characteristics
- /SURVEILLANCE/ Based on data from Poison Control Centers, there appears to be a greater risk of moderate or major symptoms among those exposed to products containing pyrethrins and piperonyl butoxide than those exposed to pyrethrins alone. A detailed review of symptoms found that respiratory symptoms (bronchospasm, cough/choke, and dyspnea) and selected dermal symptoms (dermal irritation/pain, itching, and rash) were more likely if the exposure included piperonyl butoxide. These symptoms are likely the reason for increased risk of moderate effects which typically would require medical attention. Other literature suggests that pyrethrin-based products may pose a hazard to asthmatics ... The findings from analysis of symptoms from Poison Control Centers suggests that piperonyl butoxide adds to that risk.

SECTION 12: Ecological information

Not available

SECTION 13: Disposal considerations

Not available

SECTION 14: Transport information

Not available

SECTION 15: Regulatory information

Not available

SECTION 16: Other information

Not available

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