



Picaridin

Safety Data Sheet

According to the federal final rule of hazard communication revised on 2012 (HazCom 2012)

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Picaridin

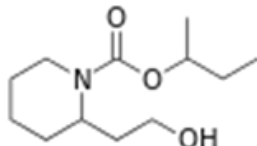
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SECTION 1: IDENTIFICATION OF THE SUBSTANCE/ MIXTURE AND OF THE COMPANY/ UNDERTAKING

1.1. Product identifier

PRODUCT NAME : Picaridin
 CAS RN : 119515-38-7
 EC# : 423-210-8
 SYNONYMS : sec-Butyl 2-(2-hydroxyethyl)-1-piperidinecarboxylate; Hydroxyethyl isobutyl piperidine carboxylate
 1-Methylpropyl 2-(2-hydroxyethyl)-1- piperidinecarboxylate;
 1-(1-Methylpropoxyacetyl)2-(2-hydroxyethyl)piperidine;
 1-Piperidinecarboxylic acid, 2-(2-hydroxyethyl)-2-methylpropyl ester;
 TECHNICAL NAME : Picaridin
 MOLECULAR FORMULA : C₁₂ H₂₃ N O₃
 STRUCTURAL FORMULA



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

1.2.1. Relevant identified uses

Picaridin is used as insect repellent.

Uses advised against: None

1.3. Details of the supplier of the safety data sheet

Jubilant Ingrevia Limited

FACTORY & REGISTERED OFFICE: Jubilant Ingrevia Limited., Bhartiagram, Gajraula, District: Amroha, Uttar Pradesh-244223, India.
 T: +91-5924-252353 to 252360 Contact Department-Safety: Ext. 7424 F: +91-5924-252352

HEAD OFFICE: Jubilant Ingrevia Limited., Plot 1-A, Sector 16-A, Institutional Area, Noida, Uttar Pradesh, 201301 - India
 T +91-120-4361000 - F +91-120-4234881 / 84 / 85 / 87 / 95 / 96 support@jubl.com - www.jubilantingrevia.com

1.4. Emergency telephone number

CHEMTEL 24-HOUR EMERGENCY TELEPHONE NUMBERS :

North America: 1-800-255-3924

International: +1-813-248-0585

India: 000-800-100-4086

Brazil: 0-800-591-6042

Mexico: 01-800-099-0731

China: 400-120-0751

SECTION 2: HAZARD(S) IDENTIFICATION

2.1. Classification of the substance or mixture

GHS-US classification

Eye damage/irritation: Category 2B	H320	Causes eye irritation.
Specific Target organ Toxicity: Category 3 (Single Exposure)	H335	May cause respiratory irritation.

2.2. Label Elements

Hazard Pictogram: GHS 07.



Signal Word: Warning!

GHS 07

HAZARD AND PRECAUTIONARY STATEMENTS:

HAZARD STATEMENTS



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- H320: Causes eye irritation.
- H335: May cause respiratory irritation

PRECAUTIONARY STATEMENTS

- P264: Wash hands, eyes and face thoroughly after handling.
- P271: Use only outdoors or in a well-ventilated area.
- P261: Avoid breathing dust/fume/gas/mist/vapours/spray.
- P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
- P305 + P351 + P338: IF IN EYES, Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337+P313: If eye irritation persists: Get medical advice/attention.
- P403+P233: Store in well-ventilated place. Keep container tightly closed.
- P405: Store locked up.
- P501: Dispose of contents/container to local/regional/national/international regulations.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Chemical	CAS #	EC#	Purity	GHS Classification
Picaridin	119515-38-7	423-210-8	≥97% (% w/w by GC)	Eye damage/irritation: Category 2B Specific Target organ Toxicity SE: Category 3

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

Key symptoms

Acute effects:

- Picaridin is irritating to mucous membranes and upper respiratory tract, if inhaled. Direct contact with eyes may lead to tearing and irritation.

Chronic effects:

- To the best of our knowledge, the chronic health effects of this product have not been fully investigated.

FIRST AID

- **Eye Contact:** Check for and remove any contact lenses. Immediately flush eyes with clean, running water for at least 15 minutes while keeping eyes open. Cool water may be used. Seek medical attention.
- **Skin Contact:** After contact with skin, wash with generous quantities of running water. Gently and thoroughly wash affected area with running water and nonabrasive soap. Cool water may be used. Cover the affected area with emollient. Seek medical attention. Wash any contaminated clothing prior to reusing.
- **Inhalation:** Remove the victim from the source of exposure to fresh, uncontaminated air. If victim's breathing is difficult, administer oxygen. Seek medical attention.
- **Ingestion:** Do NOT induce vomiting. Give water to victim to drink. Seek medical attention.

Indication of any immediate medical attention and special treatment needed

- Treat skin irritation with oral antihistamines and topical steroids.
- For eye exposure, irrigate eyes with copious amounts of water or normal saline. If contact lenses are present, they should be removed.

SECTION 5: FIRE-FIGHTING MEASURES

5.1. Extinguishing media

- *Appropriate extinguishing media:*
Small Fire- Dry chemical, Carbon dioxide, water spray or alcohol-resistant foam.
Large Fire- Water spray, fog or alcohol-resistant foam.

5.2. Special Protective Equipment and Precautions for Fire Fighter

- Evacuate the area and fight fires from a safe distance.
- If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions or as per locally valid procedures.
- Fire fighters must wear Self Contained Breathing Apparatus (SCBA) and full protective clothing. The chemical is harmful in contact with skin.



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- Move containers from fire area if you can do it without risk.
- Dike fire-control water for later disposal; do not scatter the material.
- Fight fire from maximum distance or use unmanned hose holders or monitor nozzles.

5.3. Unusual fire and explosion hazard

- When heated, vapours may form explosive mixtures with air: indoors, outdoors and sewers explosion hazards.
- Containers may explode when heated.
- Fire may produce irritating, corrosive and/or toxic gases.

SECTION 6: ACCIDENTAL RELEASE MEASURES

- Wear Appropriate respirator, impervious boots and heavy rubber (or otherwise impervious) gloves.
- Fully encapsulating, vapour-protective clothing should be worn for spills and leaks with no fire.
- ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).
- Stop leak if you can do it without risk.
- Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.
- Prevent entry into waterways, sewers, basements or confined areas.
- Use clean, non-sparking tools to collect material and place it into loosely covered plastic containers for later disposal.
- A vapour-suppressing foam may be used to reduce vapours.
- Clean it up promptly. Don't wash it away. Instead, sprinkle the spill with sawdust, vermiculite, or kitty litter. Sweep it into a plastic garbage bag, and dispose.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

- Do not get in eyes, on skin or on clothing.
- Use only in a chemical fume hood.
- Ventilate closed spaces before entering.
- Protect against electrostatic charges.

7.2. Storage

- Keep container tightly closed.
- Store at ambient temperature in a dry and well-ventilated place.
- Ensure adequate ventilation during use.
- Keep away from direct sunlight, heat and sparks.
- Never store in cabinets with or near food, animal feed, or medical supplies.
- Do not store in places where flooding is possible or in places where they might spill or leak into wells, drains, ground water, or surface water.

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Exposure Limits Values

Chemical name	STEL (ppm)	NIOSH	OSHA	ACGIH
Picaridin	None available	None available	None available	None available

Exposure Limits (International):

- Not available.

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.

8.3. Personal Protection

- **Eye/face protection:** Safety glasses with side-shields. 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.



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- **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:** Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

General Hygiene and general comments:

- Wash hands and face after working with the substance.
- Apply skin protective barrier cream

SECTION 9 : PHYSICAL AND CHEMICAL PROPERTIES

- **Information on basic physical and chemical properties.**

Sr.No.	Parameter	Typical value
1.	Appearance	Colourless-light yellow viscous Liquid
2.	Molecular weight	229.32 g/mol
3.	Refractive index	1.4717 at 20 °C
4.	Odor	Nearly Odorless
5.	Odor Threshold	Not available
6.	pH	8 to 9
7.	Melting point	-170 °C
8.	Boiling Point	296 °C
9.	Flash point	142 °C
10.	Evaporation rate (n-BuAc=1)	Not Available
11.	Flammability	Flammable Liquid
12.	Upper/lower flammability or Explosive limits	Not Available
13.	Vapor pressure	4.43 x 10 ⁻⁴ Hpa at 20 °C
14.	Vapor density (air=1)	Not Available
15.	Density at 20 °C	1.07g/Cm ³ at 20 °C
16.	Solubility water	8.6g/Ltr (Buffered)
17.	Solubility	Soluble in organic solvents
18.	Partition coefficient : n-(Octanol / water)	2.11 at 20 °C
19.	Auto-ignition temperature	Not Available
20.	Decomposition temperature	Not Available
21.	Viscosity	135.5 mPa.s at 20 °C
22.	Explosive property	Not Available

SECTION 10: STABILITY AND REACTIVITY

- **Reactivity:** No data available.
- **Stability:** Stable under recommended storage conditions.
- **Conditions to avoid:** Heat, flames and sparks, extremes of temperature and direct sunlight.
- **Incompatible chemicals:** Strong oxidizing agents.
- **Hazardous decomposition products:** When heated to decomposition it emits toxic vapors of nitrogen oxide, carbon dioxide and carbon monoxide..
- **Hazardous Polymerization:** Not reported.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity

- Picaridin is irritating to mucous membranes and upper respiratory tract, if inhaled. Direct contact with eyes may lead to tearing and irritation.

RTECS#: Not Available

Toxicity: LD50 Rat oral 4743 mg/kg

LD50 Rat dermal >2000 mg/kg

LC50 Rat (male) inhalation >4364 mg/cu m 4hr



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Skin corrosion/irritation	:	Temporary discomfort may result from prolonged dermal exposures.
Eye damage/irritation	:	Causes eye irritation.
Respiratory or skin sensitization	:	No data available.
Germ cell Mutagenicity	:	Not reported to be a mutagen.
Carcinogenicity	:	Not listed in EPA, IARC, NTP, OSHA or ACGIH. Not a carcinogen.
Reproductive toxicity	:	Not reported.
STOT-single exposure	:	Lungs- May cause irritation to respiratory system.
STOT- repeated exposure	:	No data available.
Aspiration Hazards	:	No data available.

SECTION 12: ECOLOGICAL INFORMATION

12.1. Toxicity

- No data available.

12.2. Persistence and degradability

- No data available.

12.3. Bio accumulative potential

Picaridin (119515-38-7)	
Bio concentration factor	14. BCF suggests the potential for bioconcentration in aquatic organisms is low
Log Kow	2.23

Based on the Log Kow and Bio concentration factor value it is expected to have low potential to concentrate in fatty tissue of fish and aquatic organisms relative to its surroundings.

12.4. Mobility in soil

Picaridin (119515-38-7)	
Koc	80. have high mobility in soil.
Henry's Constant	1.6×10^{-8} atm-cu m/mole. Picaridin is not expected to volatilize from dry soil surfaces.
Log Kow	1.77 (estimated). Low potential to bio accumulate.

- It will not volatilize from soil and water surfaces into the air. It is expected to move easily through soil. It is not expected to build up in fish.

12.5. Other adverse effects

Environment Fate:

- If released to soil, picaridin is expected to have high mobility based upon an estimated Koc of 80. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 1.6×10^{-8} atm-cu m/mole. Picaridin is not expected to volatilize from dry soil surfaces based upon its vapor pressure. Biodegradation data in soil or water were not available.
- If released into water, picaridin is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant. An estimated BCF of 14 suggests the potential for bioconcentration in aquatic organisms is low.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- Recycle any unused portion of the material for its approved use or return it to the manufacturer or supplier. Ultimate disposal of the chemical must consider: the material's impact on air quality; potential migration in air, soil or water; effects on animal, aquatic and plant life; and conformance with environmental and public health regulations. If it is possible or reasonable use an alternative chemical product with less inherent propensity for occupational harm/injury/toxicity or environmental contamination.
- Dissolve or mix the material with a combustible solvent and burn in a regulated, chemical incinerator equipped with after burner and scrubber.
- Dispose of this material in accordance with standard practice for disposal of potentially hazardous materials as required by applicable federal, state or local laws. Note that disposal regulations may also apply to empty containers and equipment reinstates.



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SECTION 14: TRANSPORT INFORMATION

- This substance is considered to be Hazardous for transport by Air/Rail/Road and Sea and thus it is regulated by IATA/ICAO/ARD/RID/IMO/IMDG/ US DOT.

S.No	Agency	UN Number	Proper Shipping name	Hazard Class	Packing Group
Land Transport	DOT/ADR/RID	--	Not dangerous goods.	-	-
Maritime Transport	IMDG	--	Not dangerous goods.	-	-
Air Transport	IATA	--	Not dangerous goods.	-	-
Hazard Label		Not dangerous goods.			

SECTION 15: REGULATORY INFORMATION

Classification (as per Regulation (EC) No 1272/2008):

- Hazards Class and Category: STOT SE Cat 3.
- Hazard Statements: H335.

Chemical Inventory Lists:	Status
TSCA:	Not listed
EC/ List No.	423-210-8
Canada(DSL/NDSL):	Not listed
Korea:	Listed in KECI
Australia:	Not listed
Taiwan	Listed in TCSI
New Zealand	Listed in NZIoC
Philippines	Not listed
China: IECSC	Not listed

US information

- TSCA**
CAS# 119515-38-7 is not listed on the Toxic Substances Control Act Inventory (TSCA) inventory.
- Clean Air Act:**
This material does not contain any hazardous air pollutants.
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.
- Clean Water Act:**
None of the chemicals in this product are listed as Hazardous Substances under the CWA.
None of the chemicals in this product are listed as Priority Pollutants under the CWA.
None of the chemicals in this product are listed as Toxic Pollutants under the CWA.
- OSHA**
It is not considered highly hazardous by OSHA.
- CANADA-DSL/NDSL**
The substance is not specified in DSL/NDSL.
- California Prop 65**
California No Significant Risk Level: This product is not listed.

SECTION 16: OTHER INFORMATION



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a) Compilation information of safety data sheet

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Chemical : Picaridin
CAS # : 119515-38-7
File Name : 0814Gj Ghs03 Div.3 sds Picaridin
Revision Number : 03
Date of Issue of SDS : March 01, 2021
Revision Due Date : February, 2024
Supersedes date : September 04, 2019

b) A key or legend to aberrations and acronyms used in the safety data sheet

- PBT = Persistent Bio accumulative and Toxic.
- vPvB= Very Persistent and Very Bio accumulative.
- SCBA= Self Contained Breathing Apparatus.
- NIOSH REL= National Institute for Occupational Safety and Health Recommended Exposure Limit.
- OSHA PEL=Occupational Safety and Health Administration Permissible Exposure Limit.
- OELTWA= Occupational Exposure Limit Time Weighted Averages.
- RTECS= Registry of Toxic Effects of Chemical Substances.
- NTP=National Toxicology Program.
- IARC= International Agency for Research on Cancer.
- EPA=Environmental Protection Agency.
- TSCA= Toxic Substances Control Act.
- SARA= Superfund Amendments and Reauthorization Act.
- WHIMS= Workplace Hazardous Materials Information System.
- DSL/NDL= Domestic/Non-Domestic Substances List.
- BCF = Bio Concentration Factor.
- TLV = Threshold Limit Value.
- ACGIH = American Conference of Governmental Industrial Hygienists.
- REACH = Registration, Evaluation .Authorization and Restriction of Chemicals.
- CLP = Classification, Labeling and Packaging.
- LD / LC = Lethal Doses / Lethal Concentration.
- GHS = Globally Harmonized System.
- ADR = Accord European relative au transport international de marchandises.
- IMDG-Code = International Maritime Code for Dangerous Goods.
- EmS = Emergency measures on Sea.
- ICAO = International Civil Aviation Organization.
- IATA/DGR= International Air Transport Association/Dangerous Goods Regulation.

c) Key Literature reference and sources for data

Biographical reference and data sources

- Globally Harmonized System of Classification and Labelling of Chemicals.
- CLP REG (regulation) (EC) no. 1272/2008, last modification by regulation (EC) no. 790/2009.
- Lewis, R.J. Sr. (ed) Sax's Dangerous Properties of Industrial Materials. 11th Edition. Wiley-Interscience, Wiley & Sons, Inc. Hoboken, NJ. 2004., p. 2517
- USEPA/Prevention, Pesticides, and Toxic Substances; Citizen's Guide to Pest Control and Pesticide Safety p.23 (September 1995) EPA 730-K-95-001
- US EPA; Estimation Program Interface (EPI) Suite. Ver. 4.1. Nov, 2012. Available from, as of June 21, 2016: <http://www2.epa.gov/tsca-screening-tools/> (3) Franke C et al; Chemosphere 29: 1501-14 (1994)
- O'Neil, M.J. (ed.). The Merck Index - An Encyclopedia of Chemicals, Drugs, and Biologicals. Cambridge, UK: Royal Society of Chemistry, 2013., p. 1373.
- California Environmental Protection Agency/Department of Pesticide Regulation; Summary of Toxicology Data for Picaridin. Chemical Code No. 5908 (April 4, 2005). Available from, as of June 27, 2016

SDS US (GHS HazCom 2012)

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

(End of Safety Data Sheet)