

Picaridin

sc-208171

Material Safety Data Sheet



The Power is Question

Hazard Alert Code Key:

EXTREME

HIGH

MODERATE

LOW

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

Picaridin

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

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EMERGENCY:

ChemWatch
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SYNONYMS

C12-H23-N-O3, "1-piperidinecarboxylic acid, 2-(2-hydroxyethyl)-, 1-methylpropyl ester", "1-methylpropyl 2-(-2-hydroxyethyl)-1-piperidinecarboxylate", 1-(1-methylpropoxycarbonyl)-2-(2-hydroxyethyl)piperidine, sec-butyl-2-(2-hydroxyethyl)piperidine-1-carboxylate, "hydroxyethyl isobutyl piperidine carboxylate", Icaridin, Propidin, Propidine, Pikaridin, KBR-3023, KBR3023, "insect repellent"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

		Min	Max
Flammability:	1	<div><div></div></div>	
Toxicity:	2	<div><div></div></div>	
Body Contact:	2	<div><div></div></div>	
Reactivity:	1	<div><div></div></div>	
Chronic:	0	<div><div></div></div>	

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4

CANADIAN WHMIS SYMBOLS

None

EMERGENCY OVERVIEW

RISK

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Although ingestion is not thought to produce harmful effects, the material may still be damaging to the health of the individual following ingestion, especially where pre-existing organ (e.g. liver, kidney) damage is evident.

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■ Considered an unlikely route of entry in commercial/industrial environments.

■ Exposure to the piperidines may result in increases blood pressure and heart rate, nausea, vomiting, salivation, labored breathing, muscular weakness, paralysis and convulsions. It may also excite the senses of hearing and touch.

EYE

■ Although the material is not thought to be an irritant, direct contact with the eye may produce transient discomfort characterized by tearing or conjunctival redness (as with windburn).

SKIN

■ Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.

■ The material is not thought to be a skin irritant (as classified using animal models). Temporary discomfort, however, may result from prolonged dermal exposures.

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■ Toxic effects may result from skin absorption.

INHALED

■ The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

CHRONIC HEALTH EFFECTS

■ Principal routes of exposure are by accidental skin and eye contact and by inhalation of vapours especially at higher temperatures.

No human exposure data available. For this reason health effects described are based on experience with chemically related materials.

As with any chemical product, contact with unprotected bare skin; inhalation of vapor, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
picaridin	119515-38-7	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

■ If poisoning occurs, contact a doctor or Poisons Information Center.

EYE

■ If this product comes in contact with the eyes: · Wash out immediately with fresh running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

■ Treat symptomatically.

Section 5 - FIRE FIGHTING MEASURES

Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	Not available
Lower Explosive Limit (%):	Not available
Relative Vapor Density (air=1):	Not available

EXTINGUISHING MEDIA

· Foam.
· Dry chemical powder.

FIRE FIGHTING

· Alert Emergency Responders and tell them location and nature of hazard.
· Wear full body protective clothing with breathing apparatus.
Equipment should be thoroughly decontaminated after use.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Combustible.
 - Slight fire hazard when exposed to heat or flame.
- Other combustion products include: carbon dioxide (CO₂) and nitrogen oxides (NO_x).

FIRE INCOMPATIBILITY

- Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:

Safety Glasses.

Chemical goggles.

Full face- shield.

Gloves:

Respirator:

Type A-P Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Clean up all spills immediately.
- Avoid breathing vapors and contact with skin and eyes.

MAJOR SPILLS

- Pollutant
- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of overexposure occurs.

RECOMMENDED STORAGE METHODS

- Glass container.
- Plastic container.
- Metal can or drum
- Packing as recommended by manufacturer.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- picaridin: CAS:119515-38-7

PERSONAL PROTECTION



RESPIRATOR

Type A-P Filter of sufficient capacity
Consult your EHS staff for recommendations

EYE

- Safety glasses with side shields.
- Chemical goggles.

· Full face shield.

HANDS/FEET

■ Wear chemical protective gloves, eg. PVC.

ENGINEERING CONTROLS

■ General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear an approved respirator.
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Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

State	Liquid	Molecular Weight	229.3
Melting Range (°F)	-274	Boiling Range (°F)	564.8
Solubility in water (g/L)	Partly miscible	Flash Point (°F)	Not available
pH (1% solution)	Not applicable	Decomposition Temp (°F)	248
pH (as supplied)	Not applicable	Autoignition Temp (°F)	>752
Vapor Pressure (mmHg)	25.502 x 10 ⁻⁵	Upper Explosive Limit (%)	Not available
Specific Gravity (water=1)	Not available	Lower Explosive Limit (%)	Not available
Relative Vapor Density (air=1)	Not available	Volatile Component (%vol)	Negligible
Evaporation Rate	<1 BuAc=1		

APPEARANCE

Colourless, viscous liquid; does not mix well with water (8.2 g/l, pH 4-9, 20 C; 8.6 g/l in unbuffered water, 20 C). Stable to heat and light. Very soluble in a range of organic solvents but not classified as fat soluble. No hydrolysis observed after 7 days at 50 C and after 30 days at 25 C at pH 5, 7, 9. Exotherms at 400 deg. C. Loses weight at 120 deg. C. Photolysis is unlikely as the molecule has no appreciable absorption at UV wavelengths. The molecule has two active chiral centres and exists as two pairs of diastereoisomers.

log Kow 2.11 (20 C unbuffered) log Kow 2.23 (20 C at pH 4-9)

Material	Value
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Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

· Presence of incompatible materials.
· Product is considered stable.

STORAGE INCOMPATIBILITY

■ Avoid reaction with oxidizing agents.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

PICARIDIN

TOXICITY AND IRRITATION

PICARIDIN:

■ unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY

IRRITATION

Oral (rat) LD50: 2236 mg/kg Skin (rabbit): non-Irritant *

(male, fasted) * Eye (rabbit): slight *

Oral (rat) LD50: 4743 mg/kg

(male, non-fasted) *

Dermal (rat) LD50: >2000 mg/kg male *

Inhalation (rat) LC50: >4364 mg/m³/4h *

Non-sensitising to guinea pig *

NOEL, acute, rat, oral: 100 mg/kg b.w. *

NOEL, acute, rat, inhaled: 5000 mg/kg b.w. *

NOEL, acute, rat, inhalation: 2153 mg/m³ air, 4 hour exposure *

LOEL, sub-chronic, rat, dermal: 500 mg/kg b.w./d *

NOEL, sub-chronic, rat, dermal: 200 mg/kg b.w./d *

LOEL, chronic, dermal, dog: >500 mg/kg b.w./d *

NOEL, chronic, dermal, dog: >200 mg/kg b.w./d *

LOEL combined chronic toxicity/ carcinogenicity, dermal: 200 mg/kg b.w./d *

NOEL combined chronic toxicity/ carcinogenicity, dermal: 100 mg/kg b.w./d *

(both 2 year studies)

LOEL, oncogenicity, mouse, dermal: >200 mg/kg b.w./d *

NOEL, oncogenicity, mouse, dermal: 200 mg/kg b.w./d *

(both 13 month studies)

LOEL, 2-generation dermal, rat: >200/kg b.w./d *

NOEL, 2-generation dermal, rat: 200 mg/kg b.w./d *

LOEL, teratogenicity and developmental toxicity, rat: 400 mg/kg b.w./d *

NOEL, teratogenicity and developmental toxicity, rat: 200 mg/kg b.w./d *

LOEL, teratogenicity and developmental toxicity, rabbit: 200 mg/kg b.w./d*

NOEL, teratogenicity and developmental toxicity, rabbit: 100 mg/kg b.w./d*

LOEL, sub-chronic neurotoxicity, dermal, rat: >200 mg/kg b.w./d*

NOEL, sub-chronic neurotoxicity, dermal, rat: 200 mg/kg b.w./d*

(both 13 weeks)

Mutagenicity profiles: *

Slightly positive in Chines hamster ovary cells (within toxic range);

Negative in Salmonella microsome test - in vivo;

in CHO-HGPRT assay - in vitro;

in micronucleus test - in vivo

in unscheduled DNA synthesis assay - in vitro

Dermatitis after systemic exposure, maternal effects recorded.

* Interim Specification; Icaridin: WHO/ IS/ TC/ 68/ 2001.

Section 12 - ECOLOGICAL INFORMATION

No data

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
picaridin	LOW		LOW	HIGH

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

- Consult manufacturer for recycling options and recycle where possible .
- Consult Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS: DOT, IATA, IMDG

Section 15 - REGULATORY INFORMATION

No data for picaridin (CAS: , 119515-38-7)

Section 16 - OTHER INFORMATION

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■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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Issue Date: Jan-29-2007

Print Date: Dec-2-2010