



EFFECTIVENESS

Saltidin® Mosquito Test:

Left hand - without Saltidin®

Right hand - with Saltidin®



This document contains important information and must be read in its entirety.

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Note: The information contained in this publication is current as of June, 2017. Please contact LANXESS Corporation to determine if this publication has been revised.

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Saltidin®

**THE HIGHLY EFFICIENT
ACTIVE INGREDIENT
FOR USE IN YOUR
INSECT REPELLENT**

saltigo
customized competence



THE SALTIDIN®/PICARIDIN ADVANTAGE

Saltidin®, also known by the generic names picaridin and icaridin, is an active ingredient for insect repellents that offers the perfect balance of efficacy, safety and user-friendliness.

- Long-lasting effective protection against mosquitoes that may transmit West Nile and Zika viruses and ticks that may transmit Lyme disease
- Safe toxicology profile with low skin absorption
- Good solubility
- High stability, non-corrosive and non-hazardous
- Colorless and odorless
- Excellent and pleasant cosmetic properties
- Non-sticky, non-greasy, and does not significantly attack common household materials including plastics, synthetics, coatings, foils and varnishes. Tests were performed with: polycarbonate (PC), polyvinylchloride (PVC), low density polyethylene (LDPE), high density polyethylene (HDPE), polymethylmethacrylate (PMMA), polyethylene terephthalate (PET), polyester fiber, polyamide fiber, nail polish and car paint.

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YOUR PRODUCT DEVELOPMENT PARTNER

Saltigo offers a broad range of guide formulations to facilitate product development:

EPA-Approved Formulations

- Saltidin® Spray 20%*
- All Family Insect Repellent Spray 20%
- All Family Insect Repellent Cream 20%

Global Formulations

- All Family Insect Repellent Spray Emulsion 20%
- Saltidin® Milk Waterproof 20%
- Saltidin® Spray Emulsion 15%
- Saltidin® Spray Emulsion 10%
- Saltidin® Clear Gel 15%
- Saltidin® Clear Gel 20%
- Saltidin® Combisun 15%**
- Saltidin® Aerosol 20% (oil/water/solvent based)
- Saltidin® Wax Sticks 20%
- Saltidin® Wipe 20%
- ICA 10 F Spray 10%

* *contains less fragrance to reduce allergy potential*

** *insect repellent with additional sunscreen protection*

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EFFECTIVE

Saltidin® provides long-lasting, 12-14 hour protection (depending on the formulation) from:

- Mosquitoes that may transmit West Nile Virus, Chikungunya, Dengue or Zika
- Ticks that carry Lyme disease and tick borne encephalitis

Also repels for up to eight hours:

- Biting flies
- Stable flies
- Black flies
- Gnats
- Chiggers
- Sand flies
- Scottish biting midges

SUSTAINABLY TESTED

The toxicological profile of Saltidin® has been extensively evaluated following a program of protocols developed in close cooperation with the U.S. Environmental Protection Agency (EPA). Dermal studies were conducted using Saltidin®-based products to the skin measuring dermal exposure. No adverse outcomes were identified in any studies in the program.

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REGULATORY AFFAIRS

In the United States, insecticides are regulated by the U.S. EPA, which establishes strict standards for safety, effectiveness and product quality. Saltidin® was approved as a repellent active ingredient by the U.S. EPA in 2001.

Saltigo registered the 20% pump spray and 20% cream formulations in the U.S. in 2006. The formulation All Family Insect Repellent Spray (20%) is registered also in Canada (2012) and in China (2011).

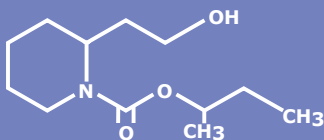
Saltidin® is approved by the U.S. Environmental Protection Agency and the Canadian Pest Management Regulatory Agency and recommended by the following institutions:

- World Health Organization (USA)
- Center for Disease Control and Prevention (USA)
- European Centre for Disease Prevention and Control
- Consumer Organization "Stiftung Warentest" (Germany)
- Queensland Government Queensland Health (Australia)
- Swiss Tropical Institute (Switzerland)
- Advanced Pest Solutions at the University of Edinburgh's Biospace Incubator facility (Scotland)

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SALTIDIN® - CHEMICAL AND PHYSICAL PROPERTIES

Structure



Empirical Formulas	$C_{12}H_{23}NO_3$
Chemical name	1-piperidinecarboxylic acid 2- (2-hydroxyethyl)- 1-methylpropylester
Commercial name	Saltidin®
Common name	Picaridin/Icaridin
Elincs number	423-210-8
CAS number	119515-38-7
Relative molecular mass	229.3 g/mole
Form	liquid/clear
Solidifying point	< -170°C
Viscosity	30.7 sec. flow time according to DIN 53211,129 mPa.s at 20°C
Boiling point	272°C at 1013 hPa
Vapor pressure	3.4 x 10 Exp-4 hPa at 20°C 5.9 x 10 Exp-4 hPa at 25°C 7.1 x 10 Exp-4 hPa at 50°C
Irritation	non-irritant
Color	colorless/brownish
Odor	almost no odor
Purity of technical product	min. 97%
Flashpoint	142°C
Density	1.036 g/cm ³ at 20°C
Solubility	in water: 8.6 g/l at 20°C, in acetone: > 250 g/l at 20°C, in n-hep- tane: > 250 g/l at 20°C, in propane-2-ol: > 250 g/l at 20°C, in xylene: > 250 g/l at 20°C
Storage conditions	store at room temperature

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