SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

Revision Date 25.07.2012 Version 2.0

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

1.1 Product identifier

Catalogue No.	111887
Product name	IR3535® (Insect repellent 3535) 3-[N-n-butyl-N-acetyl] aminopropionic acid ethylester
REACH Registration Number	A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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

Identified uses	Cosmetic raw material, Biocide substances, Repellents and attractants For additional information on uses please refer to the Merck Chemicals portal (www.merck-chemicals.com).

1.3 Details of the supplier of the safety data sheet

Company	Merck KGaA * 64271 Darmstadt * Germany * Phone:+49 6151 72-0
Responsible Department	EQ-RS * e-mail: prodsafe@merckgroup.com
Regional representation	This information is given on the authorised Safety Data Sheet for your country.

1.4 Emergency telephone number

Please contact the regional Merck representation in your country.

SECTION 2. Hazards identification

2.1 Classification of the substance or mixture

Classification (REGULATION (EC) No 1272/2008)

Eye irritation, Category 2, H319

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

2.2 Label elements

Labelling (REGULATION (EC) No 1272/2008)

Hazard pictograms

Signal word

Warning

Hazard statements

H319 Causes serious eye irritation.

Precautionary statements

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Reduced labelling (≤125 ml)

Hazard pictograms

Signal word
Warning

CAS-No. 52304-36-6

Labelling (67/548/EEC or 1999/45/EC)
The product does not need to be labelled in accordance with EC directives or respective national laws.

2.3 Other hazards
None known.

SECTION 3. Composition/information on ingredients

Formula	$C_{11}H_{21}NO_3$ (Hill)
CAS-No.	52304-36-6
EC-No.	257-835-0
Molar mass	215,29 g/mol

Hazardous components (REGULATION (EC) No 1272/2008)
Chemical Name (Concentration)

CAS-No.	Registration number	Classification
ethyl N-acetyl-N-butyl-ß-alaninate (<= 100 %)		
52304-36-6	*)	Eye irritation, Category 2, H319

*) A registration number is not available for this substance as the substance or its use are exempted from registration according to Article 2 REACH Regulation (EC) No 1907/2006, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.

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
After inhalation: fresh air.

After skin contact: wash off with plenty of water. Remove contaminated clothing.

After eye contact: rinse out with plenty of water. Call in ophthalmologist.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

irritant effects

4.3 Indication of any immediate medical attention and special treatment needed
No information available.

SECTION 5. Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media
Carbon dioxide (CO2), Foam, Dry powder

Unsuitable extinguishing media
For this substance/mixture no limitations of extinguishing agents are given.

5.2 Special hazards arising from the substance or mixture
Combustible.
Vapours are heavier than air and may spread along floors.
Forms explosive mixtures with air on intense heating.
Development of hazardous combustion gases or vapours possible in the event of fire.
Fire may cause evolution of:
nitrous gases, nitrogen oxides

5.3 Advice for firefighters
Special protective equipment for firefighters
In the event of fire, wear self-contained breathing apparatus.

Further information
Suppress (knock down) gases/vapours/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Advice for non-emergency personnel: Do not breathe vapours, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

6.2 Environmental precautions
Do not empty into drains.

6.3 Methods and materials for containment and cleaning up
Cover drains. Collect, bind, and pump off spills.
Observe possible material restrictions (see sections 7 and 10).
Take up with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

6.4 Reference to other sections
Indications about waste treatment see section 13.

SECTION 7. Handling and storage

7.1 Precautions for safe handling
Observe label precautions.

7.2 Conditions for safe storage, including any incompatibilities

Tightly closed.

Storage temperature: no restrictions.

7.3 Specific end uses

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

Contains no substances with occupational exposure limit values.

8.2 Exposure controls

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

See section 7.1.

Individual protection measures

Protective clothing needs to be selected specifically for the workplace, depending on concentrations and quantities of the hazardous substances handled. The chemical resistance of the protective equipment should be enquired at the respective supplier.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	butyl-rubber
Glove thickness:	0,7 mm
Break through time:	> 480 min

splash contact:

Glove material:	Nitrile rubber
Glove thickness:	0,40 mm
Break through time:	> 30 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 730 Camatril® -Velours (splash contact).
The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.
This recommendation applies only to the product stated in the safety data sheet<(>,<)> supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment

protective clothing

Respiratory protection

required when vapours/aerosols are generated.
Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds

The entrepeneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer. These measures have to be properly documented.

Environmental exposure controls
Do not empty into drains.

SECTION 9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Form	liquid
Colour	colourless
Odour	odourless
Odour Threshold	not applicable
pH	4,0 - 6,0 at 50 g/l 20 °C
Melting point	< -90 °C
Boiling point	No information available.
Flash point	159 °C Method: c.c.
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	No information available.
Upper explosion limit	No information available.
Vapour pressure	0,0015 hPa at 20 °C
Relative vapour density	No information available.
Relative density	0,998 g/cm³ at 20 °C
Water solubility	70 g/l at 20 °C
Partition coefficient: n-octanol/water	log Pow: 1,7 (23 °C) OECD Test Guideline 117 Bioaccumulation is not expected.
Autoignition temperature	No information available.

Decomposition temperature	No information available.
Viscosity, dynamic	14 - 22 mPa.s at 20 °C
Explosive properties	Not classified als explosive.
Oxidizing properties	none

9.2 Other data

none

SECTION 10. Stability and reactivity

10.1 Reactivity

Forms explosive mixtures with air on intense heating.

10.2 Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

10.3 Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents

10.4 Conditions to avoid

Strong heating.
A range from approx. 15 Kelvin below the flash point is to be rated as critical.

10.5 Incompatible materials

no information available

10.6 Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

11.1 Information on toxicological effects

Acute oral toxicity
LD50 rat: 14.000 mg/kg (own results)

Acute inhalation toxicity
LC50 rat: > 5,1 mg/l; 4 h
OECD Test Guideline 403

Acute dermal toxicity
LD50 rat: > 10.000 mg/kg (own results)

Skin irritation
rabbit
Result: No irritation
(own results)

Eye irritation
rabbit
Result: Eye irritation
(own results)

Causes serious eye irritation.

Sensitisation
Sensitisation test: guinea pig
Result: negative
Method: OECD Test Guideline 406

Genotoxicity in vitro
Ames test
Result: negative
(own results)

Teratogenicity
Did not show teratogenic effects in animal experiments. (own results)

Specific target organ toxicity - single exposure
The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ toxicity - repeated exposure
The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard
Based on available data the classification criteria are not met.

11.2 Further information
Further hazardous properties cannot be excluded but unlikely when the product is handled appropriately.
Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

12.1 Toxicity
Toxicity to fish
LC50 Danio rerio (zebra fish): > 100 mg/l; 96 h
OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates
EC50 Daphnia magna (Water flea): > 100 mg/l; 48 h
OECD Test Guideline 202

Toxicity to algae
IC50 Desmodesmus subspicatus (green algae): > 100 mg/l; 72 h
OECD Test Guideline 201

Toxicity to bacteria
EC50 activated sludge: > 1.000 mg/l; 3 h
OECD Test Guideline 209

12.2 Persistence and degradability
Biodegradability
ca. 99 %; 43 d
OECD Test Guideline 303A
Readily eliminated from water

11 %; 28 d
OECD Test Guideline 301D
(own results)
Not readily biodegradable.

12.3 Bioaccumulative potential

Partition coefficient: n-octanol/water
log Pow: 1,7 (23 °C)
OECD Test Guideline 117
Bioaccumulation is not expected.

12.4 Mobility in soil
No information available.

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
Henry constant
461,34 Pa*m³/mol
(own results)

Distribution preferentially in air.

Additional ecological information
Discharge into the environment must be avoided.

SECTION 13. Disposal considerations

Waste treatment methods
Waste material must be disposed of in accordance with the Directive on waste 2008/98/EC as well as other national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself.

See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions.

SECTION 14. Transport information

Land transport (ADR/RID)

14.1 - 14.6	Not classified as dangerous in the meaning of transport regulations.

Inland waterway transport (ADN)
Not relevant

Air transport (IATA)

14.1 - 14.6	Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

14.1 - 14.6	Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
Not relevant

SECTION 15. Regulatory information

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

EU regulations

Major Accident Hazard Legislation	96/82/EC Directive 96/82/EC does not apply

National legislation

Storage class	10 - 13

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.

H319	Causes serious eye irritation.

Training advice
Provide adequate information, instruction and training for operators.

Key or legend to abbreviations and acronyms used in the safety data sheet
Used abbreviations and acronyms can be looked up at www.wikipedia.org.

The information contained herein is based on the present state of our knowledge. It characterises the product with regard to the appropriate safety precautions. It does not represent a guarantee of any properties of the product.