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

1.1 Product identifier
Trade name: IReflex 5000 white
Material number: 000216D70

1.2 Relevant identified uses of the substance or mixture and uses advised against
This information is not available.

1.3 Details of the supplier of the safety data sheet
Company: ECKART GmbH
Guentersthal 4
91235 Hartenstein
Telephone: +499152770
Telefax: +499152777008
E-mail address of person responsible for the SDS: msds.eckart@altana.com

1.4 Emergency telephone number
GBK Gefahrgut Büro GmbH, Ingelheim, Germany:
From outside US: (001) 352-323-3500
(First call in English, response in your language is possible)
US & Canada (toll free): 1-800-5355-053

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
Classification (REGULATION (EC) No 1272/2008)
Not a dangerous substance according to GHS.

Classification (67/548/EEC, 1999/45/EC)
Not a hazardous substance or mixture.

Information concerning particular hazards for human and environment: Please refer to our website for further important safety instructions for handling aluminium powder:
http://www.eckart.net/fileadmin/eckart/Service/GDA_Alupulver_Safety_engl.pdf

2.2 Label elements
Labelling (REGULATION (EC) No 1272/2008)
Not a dangerous substance or mixture according to the Globally Harmonised System (GHS).

2.3 Other hazards
Combustible Solids
No information available.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

<table>
<thead>
<tr>
<th>Hazardous components</th>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Registration number</th>
<th>Classification (67/548/EEC)</th>
<th>Classification (REGULATION (EC) No 1272/2008)</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium powder</td>
<td>(stabilised)</td>
<td>7429-90-5</td>
<td>231-072-3</td>
<td>01-2119529243-45</td>
<td>F; R11</td>
<td>Flam. Sol. 1; H228</td>
<td>&gt;= 50 - &lt;= 100</td>
</tr>
</tbody>
</table>

For the full text of the R-phrases mentioned in this Section, see Section 16.
For the full text of the H-Statements mentioned in this Section, see Section 16.
For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: Move the victim to fresh air.
No hazards which require special first aid measures.

If inhaled: If unconscious place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact: Wash off immediately with soap and plenty of water.

In case of eye contact: Remove contact lenses.
If eye irritation persists, consult a specialist.

If swallowed: Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms: No information available.
Risks: No information available.

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

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable extinguishing media: Dry sand
Special powder against metal fire

Unsuitable extinguishing media: ABC powder
Carbon dioxide (CO2)
Water
Foam

5.2 Special hazards arising from the substance or mixture
Specific hazards during firefighting: Contact with water liberates extremely flammable gas (hydrogen).

5.3 Advice for firefighters
Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Further information: Standard procedure for chemical fires. Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Personal precautions: Use personal protective equipment. Evacuate personnel to safe areas. Avoid dust formation.

6.2 Environmental precautions
This information is not available.

6.3 Methods and material for containment and cleaning up
Methods for cleaning up: Use mechanical handling equipment. Do not use a vacuum cleaner.
Pick up and arrange disposal without creating dust. Sweep up and shovel. Do not flush with water. Keep in suitable, closed containers for disposal.
6.4 Reference to other sections
For personal protection see section 8.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Advice on safe handling : Avoid creating dust.
Routine housekeeping should be instituted to ensure that
dusts do not accumulate on surfaces.
Store away from heat.

For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the
application area.

Advice on protection against fire and explosion : Use explosion-proof equipment. During processing, dust may
form explosive mixture in air. Take measures to prevent the
build up of electrostatic charge. When transferring from one
container to another apply earthing measures and use
conductive hose material.

Normal measures for preventive fire protection.

Hygiene measures : General industrial hygiene practice.

7.2 Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers : Earthing of containers and apparatuses is essential. Reaction
with water liberates extremely flammable gas (hydrogen) Use
explosion-proof equipment. Store in original container. Keep
containers tightly closed in a cool, well-ventilated place. Keep
away from sources of ignition - No smoking. Keep container
closed when not in use.

Electrical installations / working materials must comply with
the technological safety standards.

Further information on storage conditions : Protect from humidity and water.

Advice on common storage : Do not store together with oxidizing and self-igniting products.
Never allow product to get in contact with water during
storage.
Keep away from oxidizing agents, strongly alkaline and
strongly acid materials in order to avoid exothermic reactions.

Other data : Keep in a dry place. No decomposition if stored and applied
as directed.

7.3 Specific end use(s)
This information is not available.
SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure Limits

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium dioxide</td>
<td>13463-67-7</td>
<td>MV (Dust)</td>
<td>500.000 fibres per cubic metre</td>
<td>SI OEL (2011-06-01)</td>
</tr>
<tr>
<td>silicon dioxide</td>
<td>7631-86-9</td>
<td>MV (Inhalable fraction)</td>
<td>4 mg/m3</td>
<td>SI OEL (2011-06-01)</td>
</tr>
</tbody>
</table>

Further information: Inhalable fraction - the part of the total suspended material that is inhaled by the employees, Substances without teratogenic effects when respecting limit values and bat values.

Biological occupational exposure limits

<table>
<thead>
<tr>
<th>Substance name</th>
<th>CAS-No.</th>
<th>Control parameters</th>
<th>Sampling time</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium powder</td>
<td>7429-90-5</td>
<td>Aluminium (Aluminium): 200 µg/l (Urine)</td>
<td>End of shift</td>
<td>SI BAT</td>
</tr>
</tbody>
</table>

Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium dioxide</td>
<td>Workers</td>
<td>Inhalation</td>
<td>long term – local effects</td>
<td>10 mg/m3</td>
</tr>
<tr>
<td></td>
<td>Consumers</td>
<td>Ingestion</td>
<td>long term – systemic effects</td>
<td>700 mg/kg</td>
</tr>
</tbody>
</table>

Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>titanium dioxide</td>
<td>Soil</td>
<td>100 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Fresh water</td>
<td>0,127 mg/l</td>
</tr>
<tr>
<td></td>
<td>Fresh water sediment</td>
<td>1000 mg/kg</td>
</tr>
<tr>
<td></td>
<td>Marine water</td>
<td>1 mg/l</td>
</tr>
<tr>
<td></td>
<td>Marine sediment</td>
<td>100 mg/kg</td>
</tr>
<tr>
<td></td>
<td>STP</td>
<td>100 mg/l</td>
</tr>
</tbody>
</table>

8.2 Exposure controls

Personal protective equipment

Eye protection  Face-shield

Safety glasses
Hand protection
Material: Leather
Glove length: Long sleeve gloves
Remarks: Leather gloves. The choice of an appropriate glove does not only depend on its material but also on other quality features and is different from one producer to the other.

Skin and body protection: Anti-static and fire resistant protective clothing. DIN EN 11612; EN 533; EN 1149-1. Anti-static safety shoes.

Respiratory protection: Use suitable breathing protection if workplace concentration requires. Breathing apparatus with filter. P1 filter

Environmental exposure controls
Water: The product should not be allowed to enter drains, water courses or the soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance: powder
Colour: light grey
Odour: odourless
Odour Threshold: No data available
pH: No data available
Melting point/range: 660 °C

Boiling point/boiling range: 2.467 °C

Flash point: No data available
Evaporation rate: No data available
Flammability (solid, gas): Combustible Solids
Auto-flammability: No data available
Upper explosion limit: No data available
Lower explosion limit: 30 g/m3

Vapour pressure: No data available
Relative vapour density: No data available
Relative density: No data available
Density: No data available
Bulk density: No data available
Water solubility: No data available
Solubility in other solvents: No data available
Partition coefficient: n-octanol/water: No data available
Ignition temperature: No data available
Decomposition temperature: No data available
Viscosity, dynamic: No data available
Viscosity, kinematic: No data available
Flow time : No data available
Explosive properties : No data available
Oxidizing properties : No data available

9.2 Other information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No decomposition if stored and applied as directed.

10.2 Chemical stability
No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions
Hazardous reactions : Contact with acids and alkalis may release hydrogen.
                    Stable under recommended storage conditions.
                    Dust may form explosive mixture in air.

10.4 Conditions to avoid
Conditions to avoid : No data available

10.5 Incompatible materials
Materials to avoid : Acids
                   Bases
                   Oxidizing agents
                   Water

10.6 Hazardous decomposition products
Contact with water or humid air : This information is not available.
Thermal decomposition : This information is not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Components:
7429-90-5:
Acute inhalation toxicity : LC50 (Rat): > 5 mg/l
                         Exposure time: 4 h
                         Test atmosphere: dust/mist
Further information

**Product:**
Remarks: No data available

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**SECTION 12: Ecological information**

12.1 **Toxicity**
No data available

12.2 **Persistence and degradability**
No data available

12.3 **Bioaccumulative potential**
No data available

12.4 **Mobility in soil**
No data available

12.5 **Results of PBT and vPvB assessment**
Not relevant

12.6 **Other adverse effects**

**Product:**
Additional ecological information : Remarks: No data available

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**SECTION 13: Disposal considerations**

13.1 **Waste treatment methods**

- **Product** : In accordance with local and national regulations.
- **Contaminated packaging** : Empty containers should be taken to an approved waste handling site for recycling or disposal.
  In accordance with local and national regulations.
SECTION 14: Transport information

14.1 UN number

14.2 UN proper shipping name

14.3 Transport hazard class(es)

14.4 Packing group

14.5 Environmental hazards

14.6 Special precautions for user

Remarks: 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 applicable for product as supplied.

SECTION 15: Regulatory information

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

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): This product does not contain substances of very high concern (Regulation (EC) No 1907/2006 (REACH), Article 57).

15.2 Chemical safety assessment

This information is not available.

SECTION 16: Other information

Full text of R-Phrases
R11: Highly flammable.

Full text of H-Statements
H228: Flammable solid.

Full text of other abbreviations
Flam. Sol.: Flammable solids

ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways; ADR - European Agreement concerning the International Carriage of Dangerous Goods by Road; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxictant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances
SAFETY DATA SHEET
generated to Regulation (EC) No. 1907/2006

IReflex 5000 white

Version 1.0 Revision Date: 05.12.2016 SDS Number: 102000000228 Print Date: 19.11.2018 Date of first issue: 05.12.2016

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Further information

SI / EN