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## SECTION 1: Description of the material or mixture and the company

### 1.1 Product identifier

Product Name: iglidur® I8-ESD-PL

### 1.2 Relevant identified use of material or mixture and uses which should be avoided

Relevant identified use: powder based 3D-printing

Uses which should be avoided: direct contact with foodstuff

### 1.3 Details on supplier who provides the safety data sheet

Company: igus® GmbH  
Spicher Str. 1a  
D-51147 Köln

Telephone: +49 2203/9649-0  
Fax: +49 2203/9649-222  
E-mail: info@igus.de

### 1.4 Emergency phone number

Emergency phone number: +49 551/19240 (Poison Information Center North)

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## SECTION 2: Possible risks

### 2.1 Classification of material or mixture

Classification according to ordinance (EC) No. 1272/2008

The product is not deemed to be hazardous.

### 2.2 Labelling elements

The product does not require labelling.

### 2.3 Other risks

No special risks are known if regulations/notes on proper storage and handling are respected.

In case of secondary processing of the product appropriate prevention measures need to be taken. If dusts, fumes or mists occur during machining, use appropriate ventilation in order to keep the effects of air pollutants below the limit values. Dust can cause mechanical irritations.

In case of unintended release, remove mechanically in order to prevent the risk of slipping or tripping. Keep away from open fire since the product is combustible.

The thermal decomposition products of this polymer can cause polymer fever with flu-like symptoms in humans, especially after smoking contaminated tobacco products.

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## SECTION 3: Composition / information about components

The product is based on a thermoplastic polymer compound with additives und fillers.

## 3.1 Substances

Not applicable.

## 3.2 Mixtures

Thermoplastic polymer mixture with additives and fillers.

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## SECTION 4: First-aid measures

### 4.1 Description of first-aid measures

General information: The first-aid workers must protect themselves. Move affected persons away from the danger zone. Let them rest. Do not leave affected person unattended.

Inhalation: After inhaling decomposition products, move affected person into the fresh air and position in such a way that breathing is facilitated. Seek medical treatment if complaints occur.

Skin contact: Irritations or injuries might occur due to mechanical contact. Rinse affected skin area with a lot of water. If symptoms occur seek medical attention. Heated moulded plastic parts can cause thermal burns which could lead to pain, redness and the formation of blisters. Immediately cool affected skin areas with cold water after contact with the molten polymer. Seek immediate medical attention. Do not peel off the cooled product from the skin.

Eye contact: irritations or injuries might occur due to mechanical contact. In the case of irritations caused by dust or combustion products rinse the affected eyes for several minutes (recommended 15 min.) with clean water or eyewash solution while keeping the eyelids pulled open. Check for contact lenses and remove them. Seek medical attention if complaints persist.

Ingestion: Risk of suffocation due to small particles. Seek medical advice. Do not induce vomiting.

### 4.2 Important acute and delayed symptoms and effects

Inhalation: No special effects or risks are known.

Skin contact: No special effects or risks are known.

Eye contact: No special effects or risks are known.

Ingestion: No special effects or risks are known.

### 4.3 Information on immediate medical assistance or special treatment

Information for the medical doctor: Treat symptomatically.

Special treatment: No special treatment.

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## SECTION 5: Fire-fighting measures

The product is combustible.

### 5.1 Fire-extinguishing agents

Suitable fire-extinguishing agents: use water spray jet, fire extinguishing powder, alcohol-resistant foam or carbon dioxide

Unsuitable fire-extinguishing agents: water with full jet

### 5.2 Special hazards due to substance or mixture

According to Ordinance (EC) No. 1907/2006 as per Article 31

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Dangerous combustion products: in the case of a fire hazardous decomposition products can occur: carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen fluoride, carbonyl fluoride, fluorocarbon compounds with low molecular-weight as well as toxic fumes, gases or particles. Combustion gases/decomposition products of organic materials must always be rated as toxic to breathing.

Under certain fire conditions traces of other poisonous products cannot be ruled out.

### 5.3 Notes on fire-fighting

Only enter danger zone with a breathing apparatus that is independent of the environmental air.

Wear personal protective equipment.

Cool endangered containers from a safe distance with water spray jet.

Settle evolving vapors with water.

Prevent flashbacks into the hazardous zone.

Keep fire-fighting water away from surface, ground water and soil.

Wear protective clothing and keep a safety distance to avoid skin contact.

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## SECTION 6: Measures after unintentional release

### 6.1 Personal precautions, protective equipment and measures to be taken in the case of emergencies

Remove mechanically in order to prevent the risk of slipping or tripping. Avoid the formation of dust. Keep away from open fire since product is combustible.

### 6.2 Environmental protection measures

Do not allow to penetrate into soil, surface water, drains, drain pipes or into the sewage system. Inform authorities in charge if the product has caused environmental pollution.

### 6.3 Methods and material for retention and cleaning

Small released quantities: remove mechanically.

Large released quantities: remove mechanically.

### 6.4 References to other sections

Refer to Section 1 for emergency contact information.

Refer to Section 7 for handling and storage.

Refer to Section 8 for information regarding suitable personal protective clothing.

Refer to Section 13 for further information on waste treatment.

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## SECTION 7: Handling and storage

### 7.1 Protective measures for safe handling

Notes on safe handling: Provide good ventilation or extraction systems at the processing machines during machining. Avoid the inhalation of dusts/mists/fumes. An accumulation of dust can lead to the risk of a dust explosion. Generally prevent the accumulation of dust. Take measures against electrostatic charging. May cause short circuits and electrical malfunctions due to its conductivity. Keep away from sources of ignition.

Do not inhale gases contained in the packaging.

Observe general hygiene measures for handling chemicals.

Do not heat the product to temperatures above 140°C.

## 7.2 Conditions for safe storage and taking into consideration incompatibilities

Special storage conditions: Store in a cool, dry and well-ventilated place. Do not store in passageways and staircases. Keep clear from sources of ignition. The product is combustible. Do not store together with strong acids, alkaline solutions and oxidation agents. Protect from exposure to direct sunlight. Keep product packaging well sealed until use. Carefully close containers again tightly after initial opening.

Storage class according to TRGS 510: (10-13) thermoplastic polymer mixture with additives and fillers.

Observe the usual measures of preventive fire-fighting.

## 7.3 Specific final applications

Recommendations: not available

Specific solutions for the industrial sector: not available

Remarks: Do not stack container packages on top of one another without securing them.

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## SECTION 8: Limitation and monitoring of exposure / personal protective equipment

### 8.1 Parameters to be monitored

Occupational exposure limit values:

<b>General dust limit value - TRGS 900</b>
alveolar fraction
1,25 mg/m <sup>3</sup>
<b>General dust limit value - TRGS 900</b>
Inhalable dust fraction
10 mg/m <sup>3</sup>
Peak limit 2(II)

Chemical Designation	Sweden
Petroleum coke, calcined	LLV: 3 mg/m <sup>3</sup>

LLV: Level Limit Value

DNEL/ PNEC: No data available.

### 8.2 Limitation and monitoring of exposure

A good normal ventilation of the work place should be sufficient to limit workers' exposure with regard to air pollutants. During machining good ventilation or extraction systems at the processing machines are required.

Personal protective measures

## **Breathing protection**

If occupational exposure limit values are exceeded an appropriate breathing apparatus has to be used. If no occupational exposure limit values are present, appropriate breathing protection measures need to be taken if dust formation is present. Breathing protection mask with particle filter (filter category P3).

## **Eye/face protection**

Protective tight-fitting goggles (DIN EN 166)

## **Other protective measures**

Closed protective clothing made of flame-retarding material. Wear closed safety shoes ESD version (ESD version according to EN 61340-4-3 or equivalent).

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## **SECTION 9: Physical and chemical properties**

### **9.1 Information on the basic physical and chemical properties**

Commercial form:	polymer powder
Colour:	black
Odour:	weak product-specific
Odour threshold:	not determined (not required with regard to safety and application).
pH value:	not applicable
Melting point/freezing point:	not determined
Initial boiling point and boiling range:	not applicable, product decomposes.
Flashpoint:	not applicable
Evaporation rate:	not applicable
Flammability (solid, gaseous):	not determined
Upper/lower flammability or explosion limits	30 g/m <sup>3</sup>
Vapour pressure:	not applicable
Vapour density:	not applicable
Relative density:	not applicable
Solubility(ies):	insoluble in water
Distribution coefficient: n-octanol/water:	not applicable
Self-ignition temperature:	not determined
Decomposition temperature:	as of 300°C
Viscosity:	not applicable
Explosive properties:	dust explosive (dust explosion class St 1)
Oxidizing properties:	not applicable

### **9.2 Additional information**

For further technical information on the solid please refer to the respective material data sheet/ product information sheet.

## SECTION 10: Stability and reactivity

### 10.1 Reactivity

When the regulations/notes on the use, storage and handling are observed, this material is not deemed to have any dangerous reactions.

### 10.2 Chemical stability

The product is chemically stable during appropriate use. Do not heat the product to temperatures above [refer to point 7.1].

### 10.3 Possible hazardous reactions

During normal storage conditions and appropriate use there will be no hazardous reactions.

### 10.4 Conditions to be avoided

The thermal decomposition of the product starts as of 300°C.

### 10.5 Incompatible materials

Avoid the contact with strong acids, strong alkalis, strong oxidizing agents, metal powder, finely distributed aluminium and magnesium at temperatures above 425°C..

### 10.6 Dangerous decomposition products

No dangerous decomposition will occur if product is appropriately used, stored and handled and when maximum operating temperatures are adhered to (see Section 7.1). Dangerous combustion products are listed in Section 5.

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## SECTION 11: Toxicological information

### 11.1 Information on noxious effects

The product does, to the best of our current knowledge, not have any noxious health effects.

Processing and machining require good ventilation or extraction systems at the processing machines.

The thermal decomposition products of fluorinated polymers can cause polymer fever with flu-like symptoms, especially after smoking contaminated tobacco products.

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## SECTION 12: Environmentally relevant information

### 12.1 Toxicity

Result/ summary: not available

### 12.2 Persistence and degradation

Result/ summary: not/poorly degradable

### 12.3 Bioaccumulation potential

no bio-availability

## 12.4 Mobility in the soil

Distribution coefficient soil/water (Koc): not applicable

Mobility: not applicable

## 12.5 Results of PBT- and vPvB assessment

PBT: not applicable

vPvB: not applicable

## 12.6 Other detrimental effects

No special effects or dangers are known. However, do not allow to penetrate into the environment, ground waters, surface waters or the sewage system.

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## SECTION 13: Disposal information

### 13.1 Procedures of waste disposal

The product can be incinerated in an approved plant in compliance with technical guidelines or stored together with domestic waste in an appropriate landfill site. Hydrogen fluoride must be removed by flue gas scrubbing.

Waste name: Fluorine-containing plastic waste.

EC waste key no.: The waste keys are linked to the intended uses of this product.

Contaminated packaging: Packaging that cannot be cleaned has to be disposed of in the same way as the product itself.

General: Prevent the release into the environment. Dispose of in compliance with regional respectively national safety instructions.

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## SECTION 14: Transport information

Not deemed to be hazardous goods according to the transport regulations

### 14.1 UN number

Not applicable

### 14.2 Appropriate UN shipping name

Not applicable

### 14.3 Transport hazard class

Not applicable

### 14.4 Packaging group

Not applicable

### 14.5 Environmental risks

Not known

## 14.6 Special precautions for the user

Not known

## 14.7 Bulk transport according to Annex II of the MARPOL – Convention and according to the IBC Code

Not applicable

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## SECTION 15: Legal regulations

### 15.1 Regulations on safety, health and the protection of the environment / specific legal regulations for the product or mixture

According to Ordinance (EC) No. 1907/2006

CAS#64743-05-1 AFS 2011:18 (Level limit value, Sweden)

Water hazard class: not hazardous to water

### 15.2 Chemical safety assessment

No chemical safety assessment required.

The product is not classified as dangerous.

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## SECTION 16: Other information

### Abbreviations and acronyms

EK: European Commission

REACH: Registration, Evaluation, Authorisation and Restriction of Chemical substances

STOT: Specific Target Organ Toxicity

PBT: Persistent, bioaccumulating, toxic

vPvB: very Persistent and very Bioaccumulating

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road

RID: Regulations for the International Transport of Dangerous Goods by Rail

ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways

IMDG: International Maritime Dangerous Goods Code

ICAO: International Civil Aviation Organization

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The information provided above in this Safety Data Sheet is based on the current state of our knowledge and experience and describes the product with regard to safety requirements. The information does not provide any analysis certificate or technical data sheet respectively a description of the quality of the goods. A quality agreement or the suitability of the product for a concrete intended use purpose may not be derived from the intended use listed in the safety data sheet. The recipient of our product is responsible for compliance with existing laws and regulations and possible property rights.

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