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

### 1.1 Product identifier

Product Name: iglidur® I3-PL

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

Relevant identified use: powder for 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

Toxic for reproduction – category 1B-H360D.

### 2.2 Labelling elements



#### Signal word

Danger

#### Danger note

H360D – Can cause harm to the unborn child

#### Safety instructions

P201 – Obtain special instructions before use

P202 – Read and understand all safety instructions before use

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P280 – Use protective gloves / protective clothing / eye protection

P501 – Dispose of content/ container according to local rules and regulations

### Contains

N-Methylpyrrolidone

### 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

### 3.1 Substances

Not applicable.

### 3.2 Mixtures

Thermoplastic polymer compound with additives and fillers

Chemical Designation	EC-No	CAS-No	Percent by Weight	Classification (1272/2008/EC)	Reach Registration number
N-Methylpyrrolidone	212-828-1	872-50-4	< 0,05	Skin Irrit. 2 H315 Eye Irrit. H319 STOT SE 3 H335 Repr. 1B H360D	01-2119472430-46-XXXX

## **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 coating powder or moulded coating 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 (recommendation 15 minutes) with clean water or eyewash solution while keeping the eyelids pulled open. Check for contact lenses and remove them if applicable. Seek medical attention if complaints persist.

Ingestion: Risk of suffocation due to small particles. Seek medical advice. Do not induce vomiting. No direct mouth-to-mouth resuscitation by first aiders.

### **4.2 Important acute and delayed symptoms and effects**

Inhalation: Dust can irritate the respiratory tract and cause bronchitis symptoms.

Skin contact: A weak skin irritation.

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, 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**

Dangerous combustion products: in the case of a fire hazardous decomposition products can occur: carbon monoxide, carbon dioxide, nitrogen oxides, hydrogen cyanide, hydrogen fluorides, carbonyl



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fluorides, low molecular fluorocarbon compounds as well as toxic fumes, gases or particles. Combustion gases/decomposition products of organic materials always have to be classified as poisonous to the respiratory system.

Under certain fire conditions traces of other noxious 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 vapours 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 when working with powder and 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. 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, strong alkalis 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 TRGS510: (10-13) thermoplastic polymer compound 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>
Respirable Fraction
10 mg/m <sup>3</sup>
Peak Limit 2(II)

Chemical Designation	European Union	Spain	Germany	Portugal	Netherlands
N-Methylpyrrolidone	TWA: 40 mg/m <sup>3</sup> ind STEL: 80 mg/m <sup>3</sup> ind S*	VLA-ED: 40 mg/m <sup>3</sup> VLA-EC: 80 mg/m <sup>3</sup> S*	TWA: 82 mg/m <sup>3</sup> Ceiling / Peak: 164 mg/m <sup>3</sup>	TWA: 0.05 ppm	TGG: 40 mg/m <sup>3</sup> STEL: 80 mg/m <sup>3</sup> S*
Chemical Designation	Denmark	Poland	Belgium	Sweden	Finland
N-Methylpyrrolidone	S* GV: 20 mg/m <sup>3</sup>	NDSch: 240 mg/m <sup>3</sup> NDS: 120 mg/m <sup>3</sup> S*	TGG: 40 mg/m <sup>3</sup> STEL: 80 mg/m <sup>3</sup> S*	NGV: 40 mg/m <sup>3</sup> KGV 80 mg/m <sup>3</sup> S*	HTP-arvot: 40 mg/m <sup>3</sup> STEL: 80 mg/m <sup>3</sup> S*
Chemical Designation	France	United Kingdom	Italy		
N-Methylpyrrolidone	TWA: 40 mg/m <sup>3</sup> ind STEL: 80 mg/m <sup>3</sup> ind S*	TWA: 40 mg/m <sup>3</sup> ind STEL: 80 mg/m <sup>3</sup> ind S*	TWA: 40 mg/m <sup>3</sup> ind STEL: 80 mg/m <sup>3</sup> ind S*		

DNEL/ PNEC: no determined values available

## 8.2 Limitation and monitoring of exposure

A good normal ventilation of the workplace 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

A suitable breathing protection device must be worn if workplace limit values are exceeded. If workplace limit values are not exceeded, suitable breathing protection measures must be taken in the case of dust formation. Use respiratory masks with particle filter (Filter category P3).

#### Eye / Face Protection

Tightly sealed safety glasses (according to DIN EN 166)

#### Other protective measures

Closed protective clothing made of flame-retardant material. Closed safety shoes (ESD-type), (ESD type according to EN 61340-4-3 or equivalent).

#### Hand protection, skin and body protection

Safety gloves: Butyl rubber. Thickness of gloves (0.5 mm), breakthrough time >8h. (EN 374)  
Long-sleeved clothing.

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## SECTION 9: Physical and chemical properties

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

Commercial form:	Plastic powder
Colour:	yellow
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:	danger of explosion due to dust (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.

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## 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



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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 and strong oxidizing agents, metal powder, finely distributed aluminum and magnesium at temperatures above 425°C.

### **10.6 Dangerous decomposition products**

No dangerous decomposition are known 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 of the Safety Data Sheet.

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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 if product is appropriately used and handled.

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

Reproduction toxicity: Contains a known toxin probably toxic for reproduction.

The thermal decomposition products of fluorinated polymers can cause polymer fever with flu-like symptoms in humans, 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 (K<sub>oc</sub>): not applicable

Mobility: not applicable





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### **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 fluorides must be removed by flue gas scrubbing.

Waste name: fluoride-containing plastic waste.

EC waste key no.: The waste keys depend on the intended use 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



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**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**

This product contains one or several notifiable and EU-listed substance(s) of very high concern (SVHC) (Ordinance (EC) No. 1907/2006 (REACH), Article 59): CAS# 872-50-4 (NMP). (Toxic for reproduction).

Observe restrictions of employment specified in the Jugendarbeitsschutzgesetz/Youth Employment Act (94/33/EC).

Guideline 92/85/EC for the protection of pregnant and breastfeeding women at the workplace must be observed.

Water hazard class: nwg - not hazardous to water

**15.2 Chemical safety assessment**

No chemical safety assessment is required.

The product is not classified as dangerous.

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**SECTION 16: Other information**

**Please refer to the complete text for hazard warnings in section 2 and 3.**

H315 – causes skin irritations

H319 – causes severe eye irritations

H335 – can irritate the respiratory ducts

H360D- can harm the unborn child

**Abbreviations and acronyms**

EC: European Commission

REACH: Registration, Evaluation, Authorisation and Restriction of Chemical Substances (Registrierung, Bewertung, Zulassung und Beschränkung chemischer Stoffe)

STOT: Specific Target Organ Toxicity (Zielorgan-Toxizität)

PBT: Persistent, Bioaccumulating, Toxic

vPvB: very Persistent and very Bioaccumulating (sehr Persistent und sehr Bioakkumulierbar)

ADR: Accord européen relatif au transport international des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

RID: Règlement concernant le transport international ferroviaire des marchandises dangereuses (Regulations for the International Transport of Dangerous Goods by Rail)

ADN: Accord européen relatif au transport international des marchandises Dangereuses par voies de Navigation intérieures

(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 guarantee of the goods. An agreement or 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 the product is responsible for compliance with existing laws and regulations and possible property rights.

This document is not subject to a change service.

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This is to certify that the above translation from German into English is complete and correct.

Sabine Bartsch  
Königswinter, 30.7.2020

Certified translator for the Higher Regional Court of Cologne/Germany