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

1.1 Product identifier
Substance name/ Trade name: **esstar**
esstar plus
SIL
SIL-HY

1.2 Relevant identified uses of the substance or mixture and uses advised against
Relevant identified uses: Separating and test dust
Uses advised against: -

1.3 Details of the supplier of the safety data sheet
Manufacturer/ Supplier: KSL staubtechnik gmbh
Address/ PO Box: Westendstrasse 11
Nat.-Ident./ Postcode/ city: DE - 89415 Lauingen
Telephone/ Fax/ E-mail: +49 (0) 9072 / 95 00-0 / Fax no: -50 / info@ksl-staubtechnik.de

1.4 Emergency telephone number
+49 (0) 9072/ 95 00–0 (Accessibility: Mon-Thu 8am to 4pm, Fri 8am to 12pm)

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
2.1.1 Classification according to Regulation (EC) No. 1272/2008
No hazardous substance or hazardous mixture according to Regulation (EC) No. 1272/2008

2.2 Label elements
2.2.1 Label elements according to Regulation (EC) No. 1272/2008
Not subject to label according to Regulation (EC) No. 1272/2008

2.3 Other hazards
May form an explosive dust-air mixture if dispersed. (Dust explosion hazard)
Under normal use, adverse health effects are not known or expected.

SECTION 3: Composition/information on ingredients

3.1 Substances
The product is a mixture.

3.2 Mixtures
Composition/ information on ingredients
Description of the mixture: **natural starch product**
Hazardous ingredients: None

Product identifier	CAS No.	EC No.	Concentrationrange [M.-%]	Classification according to Regulation (EC) No. 1272/2008
Starch	9005-25-8	232-679-6	>= 98%	Not applicable

SECTION 4: First aid measures

4.1 Description of first aid measures
General notes:
If symptoms persist, it is advised to consult a doctor. Please specify substance/product and measures taken to the doctor.

After inhalation:
Move to fresh air.
After skin contact:
Wash with water and soap.
After eye contact:
Holding eyelids open, rinse with plenty of water.
After ingestion:
Rinse mouth with plenty of water.

4.2 Most important symptoms and effects, both acute and delayed
Dust may cause irritation of the eyes and respiratory tract (caused by foreign bodies).

4.3 Indication of any immediate medical attention and special treatment needed
Treat according to symptoms.

SECTION 5: Firefighting measures

5.1 Extinguishing media
Suitable:
Water spray jet, alcohol-resistant foam
Unsuitable:
Powder and solid water jet: Hazard of dust cloud mixture

5.2 Special hazards arising from the substance or mixture
In case of fire and excessive heat, hazardous decomposition products may develop. Dust may form explosive mixtures in the air (Carbon monoxide, carbon dioxide).

5.3 Advice for firefighters
Self-contained breathing apparatus

5.4 Additional advice
Take precautionary measures against static charges. Avoid dust formation.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
6.1.1. For non-emergency personnel
Wear protective clothing as described under Section 8. Follow the instructions for safe use, as described under Section 7. Remove ignition sources, ensure adequate ventilation and avoid dust formation.
6.1.2. For emergency responders
Emergency plans are not necessary. With high dust levels, respiratory protection is however required.

6.2 Environmental precautions
No direct discharge of aqueous suspensions in water. Keep the substance away from waters, sewerage or soil. Hazard to drinking water can only occur if large amounts enter the soil and waters; in this case, notify authorities.

6.3 Methods and material for containment and cleaning up
6.3.1 Notes for containment
Avoid dust generation.
6.3.2 Notes for clean-up
Absorb or suck the mixture mechanically. For disposal, collect it in the containers provided for this purpose, according to local regulations. Use approved industrial vacuum cleaners or suction systems for potentially explosive areas.
6.3.3 Advice on inappropriate containment and cleaning methods
Blowing-off for cleaning purposes is not permitted.

6.4 Reference to other sections
As to disposal, please refer to Section 13 of the Safety Data Sheet (SDS). Personal protective equipment is specified in section 8 of the safety data sheet.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
7.1.1 Recommendations on safe handling
Avoid dust formation and deposits. Take precautionary measures against static charges.
Measures to prevent fire and explosion
Take precautionary measures against static charges. Avoid dust formation. Keep away from sources of ignition.
Measures to prevent aerosol and dust generation
Sweep only with an appropriate cleaning agent. For cleaning, use suitable methods as dry as possible - such as vacuum intake - that do not cause dust generation.
Measures to protect the environment
Keep the substance away from waters, sewerage or soil.
7.1.2 Advice on general occupational hygiene
During work do not drink, eat or smoke. Wash hands after use/ contact. In dusty atmosphere, use breathing masks and safety goggles.

7.2 Conditions for safe storage, including any incompatibilities

Advice on storage conditions
Store containers dry. Do not store together with explosives and/or oxidising substances.
Requirements for storage rooms and vessels
Store in dry and sealed containers, possibly the original ones.
Storage class:
VCI: 11 (flammable solids)

7.3 Specific end use(s)

Industry and sector specific guidance
For specific end uses (see Section 1.2), no additional information is available.

SECTION 8: Exposure controls/ personal protection

8.1 Control parameters

8.1.1 National limit value

Components with workplace-related limit values to be monitored:

Chemical identity	CAS No.	EC No.	National limit value	Exposure type	Comment/ Legal provision
General dust limit value	-	-	1.25 (A) mg/m³ (respirable)	inhalative	Workplace-related limit value TRGS 900
General dust limit value	-	-	10 (E) mg/m³ (inhalable)	inhalative	Workplace-related limit value TRGS 900

8.1.2 International limit values

Components with workplace-related limit values to be monitored:

Chemical identity	CAS No.	EC No.	International limit value	Exposure type	Comment/ Legal provision
Starch	9005-25-8	232-679-6	see the GESTIS database of international limit values *	inhalative	respective international workplace-related limit value

* The GESTIS database of international limit values can be found at the following link: http://limitvalue.ifa.dguv.de

8.2 Exposure controls

8.2.1 Appropriate engineering controls

To comply with workplace-related limit values, combined technical and individual protection measures are often necessary. Recommended measuring procedures for workplace-related measurements: see the professional association series of papers. For the identified uses (Section 1.2), technical control devices and personal protection measures are recommended. Ventilate as required to control dust in the air. With high dust content in the air, use an explosion-proof ventilation system.

8.2.2 Individual protection measures such as personal protective equipment

General
When the product is used as intended, no personal protective equipment is necessary. Treat the product in compliance with the safety instructions.
Eye/face protection
In case of dust generation, wear closed protective goggles according to the EN 166 Standard.
Skin/hand protection
In sensitive people, it may be mildly irritating to the skin due to mechanical friction. If necessary, wear protective gloves according to Standard EN 374.
Respiratory protection
In case the exposure limit values are exceeded (e.g. with open handling of powdery product), a suitable breathing mask with P2 particle filter must be worn according to Standard 143.
Occupational hygiene
During work do not drink, eat or smoke. Wash your hands before any breaks and after finishing work, and if necessary have a shower. Avoid contact with eyes and skin. After work, workers should wash or have a shower and use skin care products. Clean contaminated clothing, shoes, watches, etc., before re-using.

8.2.3 Environmental exposure controls

See Sections 6 and 7. No further action is required.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a)	**Aggregate state**	Powder - solid	
(b)	**Colour**	white to slightly yellowish	
(c)	**Odour**	neutral	
(d)	**Melting point/freezing point**	not applicable	
(e)	**Boiling point or initial boiling point and boiling range**		not applicable, as chem. Decomposition occurs before reaching the boiling point
(f)	**Flammability**	> 300° C	
(g)	**Lower and upper explosion limit**	does not apply to solids according to Regulation (EU) 2020/878.	
(h)	**Flash point**	does not apply to gases, aerosols and solids according to Regulation (EU) 2020/878.	
(i)	**Ignition temperature**	only applies to gases and liquids according to Regulation (EU) 2020/878.	
(j)	**Decomposition temperature**	from 200° C	
(k)	**pH-value**	5.0 – 7.0 (at 20°C)	
(l)	**Kinematic viscosity**	only applies to liquids according to Regulation (EU) 2020/878.	
(m)	**Solubility**	insoluble	
(n)	**Partition coefficient n-octanol/water (log value)**		not specified
(o)	**Vapour pressure**	not applicable	
(p)	**Density and/or specific gravity**	not applicable	
(q)	**Relative vapour density**	only applies to gases and liquids according to Regulation (EU) 2020/878.	
(r)	**Particulate properties**	The X_{50}-value is between 13µm and 70µm.	

9.2 Other information

Not applicable

9.2.1 Information on physical properties

Not applicable

9.2.2 Other safety-related parameters

(a)	**mechanical sensitivity**	not applicable	
(b)	**Temperature of self-accelerating polymerisation**		not applicable
(c)	**Generation of explosive dust-air mixtures**		LEL >= 60 g/m³ P_{max} ca. 8,5 $bar_Ü$ Ignition temperature > 300° C K_{St}-value 100 – 150 bar · m/s Dust explosion class St 1
(d)	**Buffer capacity**	not applicable	
(e)	**Evaporation rate**	not applicable	
(f)	**Miscibility not applicable**		
(g)	**Conductivity**	not applicable	
(h)	**Corrosivity**	not applicable	
(i)	**Gas group**	not applicable	
(j)	**Redox potential**	not applicable	
(k)	**Radical generation potential**	not applicable	
(l)	**Photocatalytic properties**	not applicable	

SECTION 10: Stability and reactivity

10.1 Reactivity

In case of appropriate storage and handling, no hazardous reactions are known.
Dust explosion hazard with dust-air mixtures

10.2 Chemical stability

Under normal ambient temperature and pressure the mixture is stable.

10.3 Possibility of hazardous reactions

No hazard under normal storage conditions

10.4 Conditions to avoid

Moisture and water during storage may cause lump formation and loss of product quality.
Temperatures > 100°C

10.5 Incompatible materials

Avoid contact with acids.

10.6 Hazardous decomposition products

None.

SECTION 11: Toxicological information

11.1 Information on hazard classes within the meaning of Regulation (EC) No 1272/2008

For the product, no toxicological information is available.
Not a hazardous substance or mixture according to Regulation (EC) No 1272/2008.

a) Acute toxicity
No information available / no hazardous substance
b) Skin corrosion/irritation
No information available / no hazardous substance
c) Serious eye damage/irritation
No information available / no hazardous substance
d) Respiratory sensitisation/skin sensitisation
No information available / no hazardous substance
e) Germ cell mutagenicity
No information available / no hazardous substance
f) Carcinogenicity
No information available / no hazardous substance
g) Reproductive toxicity
No information available / no hazardous substance
h) Specific target organ toxicity after a single exposure
No information available / no hazardous substance
i) Specific target organ toxicity in case of repeated exposure
No information available / no hazardous substance
j) Aspiration hazard
No information available / no hazardous substance

Delayed and immediate effects, as well as chronic effects from short and long term exposure
Immediate effects
Irritation of the eyes or respiratory tract caused by exposure to foreign bodies may occur
Chronic effects with prolonged exposure
No information available / not a hazardous substance

11.2 Information on other hazards

No endocrine disrupting properties or other adverse effects are known.

SECTION 12: Ecological information

For the product, no ecotoxicological data is available.

12.1 Toxicity

No data available, as no data is available from the raw material supplier.

12.2 Persistence and degradability

Starch is biodegradable.

12.3 Bioaccumulative potential

No data available, as no data is available from the raw material supplier.

12.4 Mobility in soil

No data available, as no data is available from the raw material supplier.

12.5 Results of PBT and vPvB assessment

Exempt

12.6 Endocrine disrupting properties

No data available, as no data is available from the raw material supplier.

12.7 Other adverse effects

Unknown

SECTION 13: Disposal considerations

13.1 Waste treatment methods

It can be disposed of together with household waste in compliance with local regulations. Collect the product dry. Do not dispose of into drains or surface waters.

Recommendation
Agree on the correct waste code with the disposal company.
Waste code according to the European List of Waste (LoW)
010410 – dusty and powdery waste
Treatment of purified/unclean packaging
150106 – mixed packaging according to specific material recycling

SECTION 14: Transport information

With respect to transport regulations, the product is not hazardous (ADR, RID, ADN, IMDG, ICAO/IATA).

14.1 UN number or ID number
Not applicable

14.2 UN proper shipping name
Not applicable

14.3 Transport hazard class(es)
Not applicable

14.4 Packing group
Not applicable

14.5 Environmental hazards
Not applicable

14.6 Special precautions for user
No special measures

14.7 Transport in bulk by sea in accordance with IMO instruments
Not applicable

SECTION 15: Regulatory information

15.1 Safety, health and environment regulations/legislation specific for the substance or mixture
The product does not fall within the registration requirement of EC Regulation 1907/2006 (REACH).

EU regulations

National regulations
When handling this product, the following valid legal provisions are i. a. to be complied with

AwSV Water hazard class: 1 - slightly hazardous for water
TRGS 500 "precautions"
TRGS 900 "Work-place related limit values"
Technical Instructions on Air Quality Control
Regulation on occupational health care (Verordnung zur arbeitsmedizinischen Vorsorge - ArbMedVV)
Basic principles of the Institution for Statutory Accident Insurance and Prevention on occupational medical examinations

15.2 Chemical safety assessment
No chemical safety assessment is required for this mixture.

SECTION 16: Other information

16.1 Changes to the previous version
None. Document newly created.

16.2 Abbreviations and acronyms

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
ArbMedVV	Verordnung zur arbeitsmedizinischen Vorsorge (Regulation on occupational health care)
BG	Berufsgenossenschaft (Institution for Statutory Accident Insurance and Prevention)
CAS	Chemical Abstracts Service
CLP	Classification, labelling and packaging (Regulation (EC) No. 1272/2008)
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
IMDG	International agreement on the Maritime transport of Hazardous Goods
PBT	Persistent, bio-accumulative and toxic
REACH	Registration, Evaluation and Authorisation of Chemicals (Regulation (EC) 1907/2006)
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
SDS	Safety Data Sheet
TRGS	Technische Regeln für Gefahrstoffe (Technical rules for dangerous substances)
VCI	Verband der chemischen Industrie e.V. (Registered association of the chemical industry)
vPvB	Very persistent, very bioaccumulative
AwSV	Verordnung über Anlagen zum Umgang mit wassergefährdenden Stoffen (Ordinance on Installations for the Handling of Substances Hazardous to water)

16.3 Literature references and sources of data

With regard to the sources of key data and technical information we refer to the information provided by the raw material supplier/ manufacturer or the ECHA Classification and Labelling Inventory.

16.4 Methods compliant with article 9 of Regulation (EC) No. 1272/2008 used to evaluate information for the purpose of classification

No own assessment of the mixture has been made.
Bridging principles for the classification of mixtures according to Regulation (EC) No. 1272/2008, article 6, paragraph 5 have been applied.
The classification of the water pollution class of this mixture has been carried out according to AwSV.

16.5 Training appropriate for workers

In addition to training programmes for employees on the topics of health, safety and environment, companies must ensure that their employees read and understand this safety data and are able to implement its requirements.

16.6 Other information

The product can be safely used in the production of food packaging units. In the manufacture of our products, no antibiotics, bactericides or fungicides are used.

16.7 Information on NANO

We do not use any nanotechnology processes and no synthetic Nano-materials are used for production. However, we cannot exclude the presence of small amounts of nanoparticles in the material. In order to obtain the desired particle size distribution in our product, the product is milled and then sieved. It could be that some nanoparticles are produced in such a milling process. By the way, the same applies to products such as flour or sugar! It is therefore not possible to exclude NANO material.

16.8 Disclaimer

The information contained in this safety data sheet describes the safety requirements of our product and is based on our current level of knowledge. It implies no guarantee of the product properties and does not justify a contractual legal relationship. This safety data sheet serves the user as reference information. Although this safety data sheet has been drawn up with great care, no guarantee for data accuracy, and no liability for the consequences of printing, typeset or transcription errors can be accepted. The existing laws, regulations and rule systems, including those not mentioned in this data sheet, must be complied with by the recipient of our products under their own responsibility.