

## SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

### 1.1 Product identifier

**Product name**

ASORBIO® ZAG

**Synonyms**

ASORBIO® ZAG-3A, ASORBIO® ZAG-4A, ASORBIO® ZAG-5A, ASORBIO® ZAG-13X

<https://my.chemius.net/p/V14I24/en/pd/en>

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

**Relevant identified uses**

Industrial use.

**Uses advised against**

Not known.

### 1.3 Details of the supplier of the safety data sheet

**Manufacturer**

SILKEM, d. o. o.  
Tovarniška cesta 10  
2325 Kidričevo, Slovenia  
+386 2 7991 200  
info@silkem.si

### 1.4 Emergency Telephone Number

**Emergency**

112

**Manufacturer**

+386 2 7991 208 (7h - 15h)

## SECTION 2: HAZARDS IDENTIFICATION

### 2.1 Classification of the substance or mixture

**Classification according to Regulation (EC) No 1272/2008 (CLP)**

According to the regulation, the chemical is not classified as hazardous.

### 2.2 Label elements

**Labelling according to Regulation (EC) No 1272/2008 (CLP)****Hazard statements:**

Not applicable.

**Supplemental hazard information (EU):**

EUH210 Safety data sheet available on request.

**Precautionary statements:**

Not applicable.

### 2.3 Other hazards

**PBT/vPvB**

The substances in the product are not classified as persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB).

#### Endocrine disrupting properties

The mixture does not contain substances that are included in the list of substances with endocrine disrupting properties established in accordance with Article 59 of the REACH Regulation, in a concentration  $\geq 0.1$  w/w %. The mixture does not contain substances identified as substances with endocrine disrupting properties according to the criteria of Commission Delegated Regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605, in a concentration  $\geq 0.1$  w/w %.

#### Additional information

No information.

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

For mixtures see 3.2.

### 3.2 Mixtures

Name	CAS EC Index REACH	%	Classification according to Regulation (EC) No 1272/2008 (CLP)	Specific Concentration Limits	Notes for substances
Zeolite, cuboidal, crystalline, synthetic, non- fibrous	1318-02-1 930-915-9 - 01-2119429034- 49-0017	77-83	/	/	/
quartz (SiO <sub>2</sub> )	14808-60-7 238-878-4 -	<1.4	/	/	/

#### Product description

EINECS: 215-283-8 and CAS: 1318-02-1 are merely used for information as related numbers and as a pre-registration identifier. EINECS numbers mentioned here have been designated by ECHA after registration.

The product may contain less than 0.2 % of respirable crystalline silica: CAS: 14808-60-7 EC: 238-878-4.

## SECTION 4: FIRST AID MEASURES

### 4.1 Description of first aid measures

#### General notes

When in doubt or if feeling unwell seek medical assistance.

#### Following inhalation

Remove patient to fresh air - move out of dangerous area. Ventilate the premises. Inhale fresh air. If symptoms develop and persist, seek medical attention.

#### Following skin contact

Product is not irritating to the skin. Areas of the body that have come into contact with the product must be rinsed with water.

#### Following eye contact

If substance has got into eyes, immediately wash out with plenty of water. If irritation persists, seek professional medical attention.

#### Following ingestion

In case of doubt or if feeling unwell seek medical help.

#### 4.2 Most important symptoms and effects, both acute and delayed

##### **Following inhalation**

No information.

##### **Following skin contact**

No information.

##### **Following eye contact**

No information.

##### **Following ingestion**

No information.

#### 4.3 Indication of any immediate medical attention and special treatment needed

No information.

## SECTION 5: FIREFIGHTING MEASURES

#### 5.1 Extinguishing media

##### **Suitable extinguishing media**

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. Carbon dioxide. Dry chemical powder. Water spray. Alcohol resistant foam.

##### **Unsuitable extinguishing media**

Full water jet.

#### 5.2 Special hazards arising from the substance or mixture

##### **Hazardous combustion products**

No information.

#### 5.3 Advice for firefighters

##### **Protective actions**

In case of fire or heating do not breathe fumes/vapours.

##### **Special protective equipment for fire-fighters**

In case of fire: Wear suitable respiratory equipment - self-contained breathing apparatus and full protective equipment.

##### **Additional information**

Contaminated firefighting water must be disposed of in accordance with the regulations; do not allow to reach the sewage system.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

#### 6.1 Personal precautions, protective equipment and emergency procedures

##### **For non-emergency personnel**

##### **Protective equipment**

Use personal protective equipment (Section 8). Thoroughly clean hands after use or contact.

##### **Precautionary measures**

Avoid dust generation.

##### **Emergency procedures**

No information.

**For emergency responders**

Wear appropriate personal protective equipment!

**6.2 Environmental precautions**

If accidental large entry into water or ground occurs, inform responsible authorities.

**6.3 Methods and material for containment and cleaning up****For containment**

No information.

**For cleaning up**

Pick up mechanically and remove it in accordance with regulation.

**Other information**

No information.

**6.4 Reference to other sections**

See also sections 8 and 13.

## SECTION 7: HANDLING AND STORAGE

**7.1 Precautions for safe handling****Protective measures****Measures to prevent fire**

Take precautionary measures against static discharges.

**Measures to prevent aerosol and dust generation**

Prevent dust formation. Ensure good ventilation and extraction.

**Measures to protect the environment**

Avoid release to the environment.

**Other measures**

No information.

**Advice on general occupational hygiene**

Avoid contact with skin and eyes. Use personal protective equipment. Do not eat or drink while working.

**7.2 Conditions for safe storage, including any incompatibilities****Technical measures and storage conditions**

Keep in well closed containers. Keep in a dry place. Keep container in a well ventilated place. Keep away from food, drink and animal feeding stuffs. This product is hygroscopic.

**Packaging materials**

No information.

**Requirements for storage rooms and vessels**

No information.

**Storage temperature**

No information.

**Storage class**

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**Further information on storage conditions**

No information.

## 7.3 Specific end use(s)

**Recommendations**

No information.

**Industrial sector specific solutions**

No information.

**SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**

## 8.1 Control parameters

**Occupational Exposure limit values**

Name	mg/m <sup>3</sup>	ml/m <sup>3</sup>	Short-term value mg/m <sup>3</sup>	Short-term value ml/m <sup>3</sup>	Remark	Biological Tolerance Values
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	10	/	/	/	WEL long-term, inhalable	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	4	/	/	/	WEL long-term, respirable	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	3	/	6	/	AGW (ALVEO); Allg. Staubg.: TRGS 900 2.4 AGS	/
Silica, respirable crystalline (respirable fraction)	0.1	/	/	/	Carc (where generated as a result of a work process)	/

**Information on monitoring procedures**

BS EN 14042:2003 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. BS EN 689:2018 Workplace exposure. Measurement of exposure by inhalation to chemical agents. Strategy for testing compliance with occupational exposure limit values. BS EN 482:2021 Workplace exposure. Procedures for the determination of the concentration of chemical agents. Basic performance requirements.

**DNEL/DMEL values****For product**

No information.

**For components**

Name	Type	Exposure route	exp. frequency	Remark	Value
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	Worker	inhalation	long term	/	3 mg/m <sup>3</sup>

Name	Type	Exposure route	exp. frequency	Remark	Value
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	Worker	dermal	long term	/	2.5 mg/kg bw/day

**PNEC values****For product**

No information.

**For components**

Name	Exposure route	Remark	Value
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	fresh water	/	3.2 mg/L
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	marine water	/	0.32 mg/L
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	soil	/	600 mg/kg dw

**8.2 Exposure controls****Appropriate engineering control****Substance/mixture related measures to prevent exposure during identified uses**

Use good personal hygiene practices – wash hands at breaks and when done working with material. Handle in accordance with good industrial hygiene and safety practice.

**Structural measures to prevent exposure**

No information.

**Organisational measures to prevent exposure**

Keep eyewash bottles or personal eyewash units available.

**Technical measures to prevent exposure**

Provide good ventilation and local exhaust in areas with increased concentration.

**Personal protective equipment****Eye and face protection**

Safety glasses with side protection (BS EN ISO 16321-1:2022/A1:2025).

**Hand protection**

Protective gloves (EN 374).

**Appropriate materials**

No information.

**Skin protection**

Cotton protective clothing and shoes that cover the entire foot (EN ISO 20345).

**Respiratory protection**

Not needed under normal use and adequate ventilation. Mask with dust filter (P2) or FFP2 (EN 149).

**Thermal hazards**

No information.

**Environmental exposure controls****Substance/mixture related measures to prevent exposure**

No information.

**Instruction measures to prevent exposure**

No information.

**Organisational measures to prevent exposure**

No information.

**Technical measures to prevent exposure**

No information.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

## 9.1 Information on basic physical and chemical properties

**Important health, safety and environmental information**

Physical state	solid
Shape	granules
Colour	white
Odour	no odour
Odour threshold	No information.
Melting/freezing point or softening point	No information.
Boiling point or initial boiling point and boiling range	No information.
Flammability	No information.
Lower and upper explosion limit	No information.
Flash point	No information.
Auto-ignition temperature	No information.
Decomposition temperature	No information.
pH	
Viscosity	No information.
Solubility	No information.
Partition coefficient n-octanol/water (log value)	No information.
Vapour pressure	No information.
Bulk density	610 — 800 kg/m <sup>3</sup>
Relative vapour/gas density	No information.
Particle characteristics	No information.

## 9.2 Other information

**Information with regard to physical hazard classes**

No information.

**Other safety characteristics**

No information.

**SECTION 10: STABILITY AND REACTIVITY**

**10.1 Reactivity**

Stable under normal conditions.

**10.2 Chemical stability**

Product is stable under normal conditions.

**10.3 Possibility of hazardous reactions**

The product is stable under recommended storage and handling conditions.

**10.4 Conditions to avoid**

No special precautions required. Consider the directions for use and storage. Protect from moisture and water - keep in dry place.

**10.5 Incompatible materials**

Not known.

**10.6 Hazardous decomposition products**

Under normal use conditions no hazardous decomposition products are expected.

**SECTION 11: TOXICOLOGICAL INFORMATION****11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008****(a) Acute toxicity****For components**

Name	Exposure route	Type	Species	Time	Value	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	oral	LD <sub>50</sub>	Dog	/	1000 - 31600 mg/kg	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	oral	LD <sub>50</sub>	rat	/	5000 - 31600 mg/kg	/	/

**(b) Skin corrosion/irritation****For components**

Name	Species	Time	Result	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	/	/	Non-irritant.	/	/

**(c) Serious eye damage/irritation**

No information.

**(d) Respiratory or skin sensitisation****For components**

Name	Exposure route	Species	Time	Result	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	-	/	/	Non sensitising.	/	/

**(e) (Germ cell) mutagenicity****For components**

Name	Type	Species	Time	Result	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	/	/	/	Negative.	/	/

**(f) Carcinogenicity****For components**

Name	Exposure route	Type	Species	Time	Value	Result	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	/	/	/	/	/	Negative	/	/

**(g) Reproductive toxicity****For components**

Name	Reproductive toxicity type	Type	Species	Time	Value	Result	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	-	-	/	/	/	Negative.	/	/

**(h) STOT-single exposure**

No information.

**(i) STOT-repeated exposure**

No information.

**(j) Aspiration hazard**

No information.

**Symptoms related to the physical, chemical and toxicological characteristics**

No information.

**Interactive effects**

No information.

**11.2 Information on other hazards****Endocrine disrupting properties**

The product does not contain substances with the potential for endocrine disorders.

**Other information**

No information.

**SECTION 12: ECOLOGICAL INFORMATION**

## 12.1 Toxicity

**Acute (short-term) toxicity****For components**

Name	Type	Value	Exposure time	Species	Organism	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	EC <sub>50</sub>	> 100 mg/L	48 h	daphnia	/	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	LC <sub>50</sub>	> 680 mg/L	96 h	fish	/	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	EC <sub>50</sub>	> 300 mg/L	96 h	algae	/	/	/

**Chronic (long-term) toxicity****For components**

Name	Type	Value	Exposure time	Species	Organism	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	NOEC	> 86.7 mg/L	/	fish	/	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	NOEC	32 mg/L	/	aquatic invertebrate	/	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	NOEC	> 200 mg/L	/	sediment organisms	/	/	/
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	LC <sub>50</sub>	9000 mg/kg soil dw	23 days	Terrestrial plants	/	OECD 208	seedling emergence

Name	Type	Value	Exposure time	Species	Organism	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	EC <sub>50</sub>	9000 mg/kg soil dw	/	Terrestrial plants	/	OECD 208	seedling growth
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	NOEC	5000 mg/kg soil dw	/	Terrestrial plants	/	OECD 208	/

## 12.2 Persistence and degradability

**Abiotic degradation, physical- and photo-chemical elimination**

No information.

**Biodegradation**

No information.

## 12.3 Bioaccumulative potential

**Partition coefficient n-octanol/water (log value)**

No information.

**Bioconcentration factor (BCF)****For components**

Name	Species	Organism	Value	Duration	Evaluation	Method	Remark
Zeolite, cuboidal, crystalline, synthetic, non-fibrous	-	/	/	/	Does not bioaccumulate.	/	/

## 12.4 Mobility in soil

**Known or predicted distribution to environmental compartments**

No information.

**Surface tension**

No information.

**Adsorption/Desorption****For components**

Name	Type	Criterion	Value	Evaluation	Method	Remark
quartz (SiO <sub>2</sub> )	Soil	/	/	Low mobility.	/	/

## 12.5 Results of PBT and vPvB assessment

No evaluation.

## 12.6 Endocrine disrupting properties

The product does not contain substances with the potential for endocrine disorders.

## 12.7 Other adverse effects

No information.

## 12.8 Additional information

### For product

Avoid release to the environment.

### For components

**Zeolite, cuboidal, crystalline, synthetic, non-fibrous**

WGK: 0

### quartz (SiO<sub>2</sub>)

This substance is not considered to be persistent, bioaccumulative and toxic (PBT). This substance is not considered to be very persistent and very bioaccumulative (vPvB).

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1 Waste treatment methods

#### Product / Packaging disposal

##### Waste chemical

Waste should be handled in accordance with national regulations.

#### Waste codes / waste designations according to LoW

No information.

#### Packaging

Deliver completely emptied containers to approved waste disposal authorities.

#### Waste codes / waste designations according to LoW

No information.

#### Waste treatment-relevant information

Disposal in accordance with the Rules on the management of waste.

#### Sewage disposal-relevant information

No information.

#### Other disposal recommendations

No information.

## SECTION 14: TRANSPORT INFORMATION

### 14.1 UN number or ID number

ADR/RID	IMDG	IATA	ADN
Not dangerous according to transport regulations.	Not dangerous according to transport regulations.	Not dangerous according to transport regulations.	Not dangerous according to transport regulations.

### 14.2 UN proper shipping name

ADR/RID	IMDG	IATA	ADN
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable

### 14.3 Transport hazard class(es)

ADR/RID	IMDG	IATA	ADN
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable

## 14.4 Packing group

ADR/RID	IMDG	IATA	ADN
Not given/not applicable	Not given/not applicable	Not given/not applicable	Not given/not applicable

## 14.5 Environmental hazards

ADR/RID	IMDG	IATA	ADN
NO	NO	NO	NO

## 14.6 Special precautions for user

ADR/RID	IMDG	IATA	ADN
Limited quantities: <b>Not given/not applicable</b>	Limited quantities: <b>Not given/not applicable</b>		Limited quantities: <b>Not given/not applicable</b>

## 14.7 Maritime transport in bulk according to IMO instruments

ADR/RID	IMDG	IATA	ADN
/	Not given/not applicable	/	/

## SECTION 15: REGULATORY INFORMATION

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

- Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (including last amendment Commission Regulation (EU) 2020/878)
- Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
- EH40/2005 Workplace exposure limits (Fourth Edition 2020)

**Information according 2004/42/EC about limitation of emissions of volatile organic compounds (VOC-guideline)**

not applicable

**Ingredients according to Regulation (EC) No 648/2004 on detergents**

No information.

**Special instructions**

No information.

## 15.2 Chemical Safety Assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

## SECTION 16: OTHER INFORMATION

**Indication of changes**

1.4 Emergency Telephone Number 8.1 Control parameters 8.2 Exposure controls 11.2 Information on other hazards 12.1 Toxicity 12.6 Endocrine disrupting properties 14.3 Transport hazard class(es) 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

### Key literature references and sources for data

No information.

### Abbreviations and acronyms

ATE - Acute Toxicity Estimate  
 ADR - Agreement concerning the International Carriage of Dangerous Goods by Road  
 ADN - European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways  
 CEN - European Committee for Standardisation  
 C&L - Classification and Labelling  
 CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008  
 CAS# - Chemical Abstracts Service number  
 CMR - Carcinogen, Mutagen, or Reproductive Toxicant  
 CSA - Chemical Safety Assessment  
 CSR - Chemical Safety Report  
 DMEL - Derived Minimal Effect Level  
 DNEL - Derived No Effect Level  
 DPD - Dangerous Preparations Directive 1999/45/EC  
 DSD - Dangerous Substances Directive 67/548/EEC  
 DU - Downstream User  
 EC - European Community  
 ECHA - European Chemicals Agency  
 EC-Number - EINECS and ELINCS Number (see also EINECS and ELINCS)  
 EEA - European Economic Area (EU + Iceland, Liechtenstein and Norway)  
 EEC - European Economic Community  
 EINECS - European Inventory of Existing Commercial Substances  
 ELINCS - European List of notified Chemical Substances  
 EN - European Standard  
 EQS - Environmental Quality Standard  
 EU - European Union  
 Euphrac - European Phrase Catalogue  
 EWC - European Waste Catalogue (replaced by LoW – see below)  
 GES - Generic Exposure Scenario  
 GHS - Globally Harmonized System  
 IATA - International Air Transport Association  
 ICAO-TI - Technical Instructions for the Safe Transport of Dangerous Goods by Air  
 IMDG - International Maritime Dangerous Goods  
 IMSBC - International Maritime Solid Bulk Cargoes  
 IT - Information Technology  
 IUCLID - International Uniform Chemical Information Database  
 IUPAC - International Union for Pure Applied Chemistry  
 JRC - Joint Research Centre  
 Kow - octanol-water partition coefficient  
 LC50 - Lethal Concentration to 50 % of a test population  
 LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose)  
 LE - Legal Entity  
 LoW - List of Wastes (see <http://ec.europa.eu/environment/waste/framework/list.htm>)  
 LR - Lead Registrant  
 M/I - Manufacturer / Importer  
 MS - Member States  
 MSDS - Material Safety Data Sheet  
 OC - Operational Conditions  
 OECD - Organization for Economic Co-operation and Development  
 OEL - Occupational Exposure Limit  
 OJ - Official Journal  
 OR - Only Representative  
 OSHA - European Agency for Safety and Health at work  
 PBT - Persistent, Bioaccumulative and Toxic substance  
 PEC - Predicted Effect Concentration  
 PNEC(s) - Predicted No Effect Concentration(s)

PPE - Personal Protection Equipment  
(Q)SAR - Qualitative Structure Activity Relationship  
REACH - Registration, Evaluation, Authorisation and Restriction of Chemicals (Regulation (EC) No 1907/2006)  
RID - Regulations concerning the International Carriage of Dangerous Goods by Rail  
RIP - REACH Implementation Project  
RMM - Risk Management Measure  
SCBA - Self-Contained Breathing Apparatus  
SDS - Safety data sheet  
SIEF - Substance Information Exchange Forum  
SME - Small and Medium sized Enterprises  
STOT - Specific Target Organ Toxicity  
(STOT) RE - Repeated Exposure  
(STOT) SE - Single Exposure  
SVHC - Substances of Very High Concern  
UN - United Nations  
vPvB - Very Persistent and Very Bioaccumulative

**List of relevant H phrases**

No information.