1. Identification of the substance/mixture and of the company

1.1. Product identifier : expanded glass granules **Liaver®**

REACH-Registration No.: Exeption from obligation of registration according to EC-Regulation 1907/2006 App. V.11

1.2. Relevant identified uses of the substance/mixture:
Mineral light weight aggregate with low thermal conductivity for plaster, mortar, lighweight concrete; filler for resins, clay, asphalt, putty, fire proofing panels, refractory materials, in floors for levelling, special application in Construction Chemicals Preparations, chemical and lime-stone industry, oil and gas well technology

1.3. Company :

Liaver GmbH & Co. KG
Gewerbepark „ Am Wald“ 17
98693 Ilmenau
Germany
Fon: 0049 3677 8629 0
Fax: 0049 3677 8629 30
Internet: www.liaver.com

E-mail responsible person of MSDS: monika.stiebert@liaver.com

1.4. Emergency call: 0049 3677 8629 0

2. Hazards identification

2.1. Classification according to EG-regulation 1272/2008 (CLP): *not a* hazardous mixture
Classification according to EG-regulation 67/548/EWG: *not a* hazardous substance
2.2, Label elements: *not any*
2.3. Other hazards:
Information on danger for human and environment*:* During processing can appear pollution of dust (dust of glass); often contact to skin results in getting chapped and desiccated hands.

Safety constructions:
P 260: do not breath dust
P 285: in case of inadequate ventilation wear lespiratory protection

3. Composition/Information on ingredients

This product is *an article* according to EC-regulation 1907/2006

Chemical description: Inorganic thermal expanded glass granules based on recycled glass (bottle glass and flat glass)

Hazardous ingredients : *none*

CAS-No. 65997-17-3

EG-No. (EINECS) 266-046-0

Chemical composition: (in Mass-%, circa) : SiO_2 72 ; Na_2O 13; CaO 8; MgO 3; Al_2O_3 2; K_2O 1

4. First Aid Measures

Symptoms and effects of a desease *unknown*

- after inhalation to get some fresh air
- after to contact skin to clean dry or wet
- after contact to eyes flushing thoroughly with water and consult the doctor
- after swallow this is unlikely to happen

5. Firefighting Measures

5.1. Estiguishing media : *not applicable*; *non-flammable* material;
5.2. Special hazards arising from substance/mixture: *no release* of hazardous and oxidizing gases;
5.3. Advice for firefighters: fire extinction measures designed for surrounding area fire;
thermal stability at least up to 750°C then softening; melting >1000°C

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures: to avoid developement of dust; ensure a good ventilation or a sufficient breathing protection; danger of slippering by leakage of the product – personally protective measures see point 8

6.2. Environmental precautions: should not enter the sewage system; floats up due to very low density; danger of blockage of pipelines

6.3. Methods and material for containment and cleaning up: if necessary, take measures of blinding on containers/packages to make them trickle-proof to avoid loss of material. Pick up dry without pollution of dust (vakuum-cleaning).

6.4. Reference to other sections: disposal see point 13

7. Handling and Storage

7.1. Precautions for safe handling to avoid developement of dust

7.2. Conditions for safe storage, including any incompatibilities : store in dry area

7.3. Specific end use(s) **To fill silos by blowing use air pressure of 0.5 bar only !**

8. Exposure controls/personal protection

8.1. Control parameters

Critical values of exposure : Inhalable fraction 10 mg/m³ (E)
Respirable fraction 3 mg/m³ (A)

8.2. Exposure controls

8.2.2. Individual protection measures, such as personal protective equipment

- Breathing protection — particle filtered protective mask P1-P3
- Hands protection — safety gloves CE type I
- Eye protection — safety goggles
- Body protection — workwear, non-slip shoes
- Measures of safety and hygiene — *not necessary*

9. Physical and chemical Properties

9.1. Information on basic physical and chemical properties

Form:	Granules; grain sizes 0.1 - 32mm
Colour:	grey; grey-light
Odor:	*no odor*
pH-value:	7 (determined in water solution 100g/l; 20°C)
Status change:	softening temperature >750 °C
Ignition temperature:	*not applicable*
Flare point:	*not applicable*
Combustion values:	*not applicable*
Grain density:	circa 0.26 – 0.8 kg/dm³ (against to particle size group)
Bulk density:	circa 0.15 – 0.5 kg/dm^3 (against to particle size group
Thermal conductivity λ_R :	0.070 W/mK (against to particle size groups 2-4mm, 4-8mm)
Water solubility:	*insoluble in water*

9.2. Other information

French Regulations on VOC emissions from construction products (Decret No. 2011-321 – Labelling of construction products installed indoors : Emission class **A+** (très faibles émissions)
very weakly emission-into-the-air

10. Stability and reactivity

10.1. Reactivity *not reactive*

10.2. Chemical stability stable under normal ambient and anticipated storage and handling conditions of temperature and pressure

10.3. Possibility of hazardous reactions *no reactions known*

10.4. Conditions to avoid Temperatures >1000°C; material melts

10.5. Incompatible materials Fluorhydric acid (HF); material dissolves

10.6. Hazardous decomposition products *non disintegration products known*

11. Toxicological information

not apply to

In accordance with our previous experiences the product does not initiate toxic effects

12. Ecological information

12.1. Toxicity **Ames-test:** The eluate of Liaver does not show mutagenic effect.
Test of botanical agreeableness: Liaver is agreeable to plants

12.2. Persistence and degradability: *not able* to decompose biologically, it is a mineral product
12.3. Bioaccumulative potential : *not applicable*

12.4. Mobility in soil : *not applicable*
12.5. Results of PBT and vPvB assessment : *not applicable*
12.6. Other harmfull effects: *not apply to*

13. Disposal considerations

13.1. Waste treatment methods

Dry collected material usable furthermore. Discarded material may disposed off with construction debris in conformity with local regulations and according to inquiry of competent authorithies.

Code-No. of European Cataloque of waste: 170202

Packaging: Disposal according to local regulations

14. Transport information

14.1. UN- number: *not relevant*
14.2. UN proper shipping name: *not relevant*
14.3. Transport hazard class(es):

Road-Transport **(**ADR/RID) *no* classification
Shipping-Transport (IMO/IMDG) *no* classification Seabased pollution *no*
Air-Transport ((ICAO-IATA-DGR) *no* classification

Other information: *None* hazardous material as defined in the transport directive
14.4. Packing group: *not relevant*
14.5. Environmental hazards: *not relevant*
14.6. Special precautions for user: To fill silos by pneumatic conveying use low air pressure of 0.5 bar maximum highest !

14.7 Transport in bulk according to Annex II MARPOL 73/78 and the IBC Code: *not relevant*

15. Regulatory information

15.1. Safety, health and enviromental regulations/legislation specific for the substance or mixture:

National regulations: Technische Anleitung LuftTRGS 900
Wassergefährdungsklasse (WGK) waterbased pollution *no*
Chemikaliengesetz: The product is defined as *article* in the legal sense of the law.
15.2. Chemical safety assesment: *not relevant*
The product has not to register according to EC regulation 1907/2006 Annex V.11 (REACH)

16. Other Details

The valid regulations of work safety and laws are followed.The above mentioned information describes the actual state of our technical knowledge and our experience. But it is not a legally binding assurance of definite attributes, nor of the suitability for a specific application purpose. The user is not freed to carry out his own tests.
Revision of MSDS: laboratory
Modifications were made in points: 1: extensions in applications
9: extensions in particle sizes up to 32mm;
adjustment of grain density and bulk density up to particle size 32 mm;
declaration VOC emission class