1 Identification

- Product identifier
  - Trade name: **Venus flow**
  
  - Application of the substance / the mixture: Dental filling material

- Details of the supplier of the safety data sheet
  - Manufacturer/Supplier:
    Kulzer GmbH
    Leipziger Straße 2, 63450 Hanau (Germany)
    Tel.: +49 (0)800 4372522

  - Information department:
    Tel. +1 (800) 431-1785  Fax: +1 (800) 522-1545
e-mail: customer.servicehkna@kulzer-dental.com

  - Emergency telephone number:
    Emergency CONTACT (24-Hour-Number)
    GBK/Infotrac ID  105860: (domestic) 1 800 535 5053 or international (001) 352 323 3500

2 Hazard(s) identification

- Classification of the substance or mixture
  - Skin Sens. 1  H317  May cause an allergic skin reaction.

- Label elements
  - GHS label elements
    The product is classified and labeled according to the Globally Harmonized System (GHS).
    - **Hazard pictograms**

  - Signal word: **Warning**

  - Hazard-determining components of labeling:
    triethylen glycol dimethacrylate

  - Hazard statements
    May cause an allergic skin reaction.

  - Precautionary statements
    Avoid breathing dust/fume/gas/mist/vapors/spray
    Wear protective gloves.
    Specific treatment (see on this label).
    Wash contaminated clothing before reuse.
    If skin irritation or rash occurs: Get medical advice/attention.
    IF ON SKIN: Wash with plenty of water.

- Classification system
  - NFPA ratings for USA (scale 0-4)
    - Health = 1
    - Fire = 1
    - Reactivity = 0

(Contd. on page 2)
Safety Data Sheet
acc. to OSHA HCS

Printing date 06/03/2017 Reviewed on 06/03/2017

Trade name: Venus flow

HMIS-Ratings (Scale 0-4)

- **HEALTH**
  - Health = 1
- **FIRE**
  - Fire = 1
- **REACTIVITY**
  - Reactivity = 0

Results of PBT and vPvB assessment

- PBT: Not applicable.
- vPvB: Not applicable.

3 Composition/information on ingredients

- **Chemical characterization:** Mixtures
  - **Description:** Composition based on methacrylates

<table>
<thead>
<tr>
<th>Dangerous components:</th>
</tr>
</thead>
<tbody>
<tr>
<td>109-16-0 triethylen glycol dimethacrylate</td>
</tr>
</tbody>
</table>

Additional information For the wording of the listed hazard phrases refer to section 16.

4 First-aid measures

- **Description of first aid measures**
  - **General information** Immediately remove any clothing soiled by the product.
  - **After inhalation** Supply fresh air; consult doctor in case of complaints.
  - **After skin contact**
    - Immediately wash with water and soap and rinse thoroughly.
    - If skin irritation continues, consult a doctor.
  - **After eye contact**
    - Rinse opened eye for several minutes under running water. Then consult a doctor.
  - **After swallowing**
    - Rinse out mouth and then drink plenty of water.
    - If symptoms persist consult doctor.
  - **Information for doctor**
    - Most important symptoms and effects, both acute and delayed
      - No further relevant information available.
    - Indication of any immediate medical attention and special treatment needed
      - No further relevant information available.

5 Fire-fighting measures

- **Extinguishing media**
  - Suitable extinguishing agents
    - CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
    - Use fire fighting measures that suit the environment.
  - Special hazards arising from the substance or mixture No further relevant information available.

- **Advice for firefighters**
  - Protective equipment: No special measures required.
6 Accidental release measures

- Personal precautions, protective equipment and emergency procedures
  Wear protective equipment. Keep unprotected persons away.
- Environmental precautions:
  Do not allow product to reach sewage system or any water course.
  Do not allow to penetrate the ground/soil.
- Methods and material for containment and cleaning up:
  Absorb with liquid binding material (diatomite, universal binders, for small amounts tissues).
- Reference to other sections
  See Section 13 for disposal information.
  See Section 8 for information on personal protection equipment.

7 Handling and storage

- Handling
  - Precautions for safe handling
    Wear protective equipment. Keep unprotected persons away.
    Please observe the additional instructions in the product’s instructions for use.
  - Information about protection against explosions and fires: No special measures required.

- Conditions for safe storage, including any incompatibilities
  - Storage
    - Requirements to be met by storerooms and receptacles: No special requirements.
    - Information about storage in one common storage facility: Not required.
    - Further information about storage conditions: Keep cool, if possible (not above 25 °C).

- Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

- Additional information about design of technical systems: No further data; see item 7.

- Control parameters
  - Components with limit values that require monitoring at the workplace:
    The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
  - Additional information: The lists that were valid during the creation were used as basis.

- Exposure controls
  - Personal protective equipment
    - General protective and hygienic measures
      Keep away from foodstuffs, beverages and feed.
      Immediately remove all soiled and contaminated clothing
      Wash hands before breaks and at the end of work.
      Avoid contact with the eyes and skin.
    - Breathing equipment: Not required.
Protection of hands:
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
Solvent resistant gloves
Check protective gloves prior to each use for their proper condition.
Recommended

Material of gloves
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Penetration time of glove material
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

For the permanent contact of a maximum of 15 minutes gloves made of the following materials are suitable:
Butyl rubber, BR
Nitrile rubber, NBR

Eye protection: Tightly sealed goggles.

Body protection: Light weight protective clothing

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9 Physical and chemical properties

Information on basic physical and chemical properties

General Information

Appearance:
- Form: Pasty
- Color: Different according to coloring
- Odor: Characteristic
- Odor threshold: Not determined.

PH-value: Not determined.

Change in condition
- Melting point/Melting range: undetermined
- Boiling point/Boiling range: undetermined

Flash point: >160 °C (>320 °F)

Flammability (solid, gaseous) Not applicable.

Ignition temperature:
- Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.

Explosion limits:
- Lower: Not determined.
Trade name: Venus flow

- Upper: Not determined.
- Vapor pressure: Not determined.
- Density at 20 °C (68 °F): 1.8 g/cm³ (15.021 lbs/gal)
  - Relative density: Not determined.
  - Vapor density: Not determined.
  - Evaporation rate: Not determined.
- Solubility in / Miscibility with
  - Water: Not miscible or difficult to mix
- Partition coefficient (n-octanol/water): Not determined.
- Viscosity:
  - dynamic: Not determined.
  - kinematic: Not determined.
- Solvent content:
  - Solids content: >60 %
- Other information: No further relevant information available.

10 Stability and reactivity
- Reactivity: No further relevant information available.
- Possibility of hazardous reactions: No dangerous reactions known
- Conditions to avoid: No further relevant information available.
- Incompatible materials: No further relevant information available.
- Hazardous decomposition products: none
- Additional information:
  Product might polymerize after considerable exceeding of recommended storage time or temperature.

11 Toxicological information
- Information on toxicological effects
- Acute toxicity:
  - LD/LC50 values that are relevant for classification:
    - 109-16-0 triethylen glycol dimethacrylate:
      - Oral LD50 > 5000 mg/kg (rat)
      - Dermal LD50 > 2000 mg/kg (mouse)
    - 24650-42-8 2,2-dimethoxy-1,2-diphenylethan-1-one:
      - Oral LD50 > 6000 mg/kg (rat)
      - Dermal LD50 > 7100 mg/kg (rat)
- Primary irritant effect:
  - on the skin: Irritant to skin and mucous membranes.
  - on the eye: Irritating effect.
- Sensitization: Guinea-Pig Maximisation Test (OECD 406): negative
Trade name: **Venus flow**

### 12 Ecological information

**Toxicity**

**Aquatic toxicity:**

109-16-0 triethylene glycol dimethacrylate

EC50/72h > 100 mg/l (algae)

**Persistence and degradability** No further relevant information available.

**Behavior in environmental systems:**

**Bioaccumulative potential** No further relevant information available.

**Mobility in soil** No further relevant information available.

**Additional ecological information:**

**General notes:** Avoid transfer into the environment.

**Results of PBT and vPvB assessment**

**PBT:** Not applicable.

**vPvB:** Not applicable.

**Other adverse effects** No further relevant information available.

### 13 Disposal considerations

**Waste treatment methods**

**Recommendation**

Small quantities can be polymerized by light and the cured solid material can be disposed of with the regular garbage. Larger quantities must be disposed of following the regulations of the local authorities.

**Uncleaned packagings:**

**Recommendation:** Disposal must be made according to official regulations.

### 14 Transport information

**UN-Number**

**DOT, ADR, ADN, IMDG, IATA** Void

**UN proper shipping name**

**DOT, ADR, ADN, IMDG, IATA** Void
**Trade name:** Venus flow

### 15 Regulatory information

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

- **SARA Section 355 (extremely hazardous substances)**
  - None of the ingredients is listed.

- **TSCA (Toxic Substances Control Act)**
  - None of the ingredients is listed.

- **Cancerogenity categories**
  - None of the ingredients is listed.

- **TLV (Threshold Limit Value established by ACGIH)**
  - None of the ingredients is listed.

- **GHS label elements**
  - The product is classified and labeled according to the Globally Harmonized System (GHS).
  - **Hazard pictograms**
    - GHS07

  - **Signal word** Warning

  - **Hazard-determining components of labeling:**
    - triethylen glycol dimethacrylate

  - **Hazard statements**
    - May cause an allergic skin reaction.

  - **Precautionary statements**
    - Avoid breathing dust/fume/gas/mist/vapors/spray
    - Wear protective gloves.
    - Specific treatment (see on this label).
    - Wash contaminated clothing before reuse.
    - If skin irritation or rash occurs: Get medical advice/attention.
Safety Data Sheet
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Trade name: Venus flow

IF ON SKIN: Wash with plenty of water.

Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

16 Other information

These data are based on our present knowledge. However, they shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· Relevant phrases
  H317 May cause an allergic skin reaction.

· Date of preparation / last revision 06/03/2017 / 2

· Abbreviations and acronyms:
  ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
  IMDG: International Maritime Code for Dangerous Goods
  DOT: US Department of Transportation
  IATA: International Air Transport Association
  ACGIH: American Conference of Governmental Industrial Hygienists
  EINECS: European Inventory of Existing Commercial Chemical Substances
  ELINCS: European List of Notified Chemical Substances
  CAS: Chemical Abstracts Service (division of the American Chemical Society)
  NFPA: National Fire Protection Association (USA)
  HMIS: Hazardous Materials Identification System (USA)
  LD50: Lethal dose, 50 percent
  PBT: Persistent, Bioaccumulative and Toxic
  vPvB: very Persistent and very Bioaccumulative
  OSHA: Occupational Safety & Health
  TLV: Threshold Limit Value
  PEL: Permissible Exposure Limit
  REL: Recommended Exposure Limit
  Skin Sens. 1: Skin sensitisation – Category 1
  Skin Sens. 1B: Skin sensitisation – Category 1B

· * Data compared to the previous version altered.