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

· 1.1 Product identifier
· Trade name: Glycerin  
  Glycerol  
  Glycerolum
· Article number: 100514
· CAS Number:  56-81-5
· EC number: 200-289-5

· 1.2 Relevant identified uses of the substance or mixture and uses advised against No further relevant information available.
· Application of the substance / the mixture  
  Additive for cosmetic or pharmaceutical preparations  
  Pharmaceutical production.

· 1.3 Details of the supplier of the safety data sheet
· Manufacturer/Supplier:  
  Fagron UK Ltd  
  4B Coquet St  
  Newcastle upon Tyne  
  England NE1 2QB

· Further information obtainable from:  
  Emergency response telephone number:  
  +44 (0) 845 652 2525
· 1.4 Emergency telephone number:  
  Emergency response telephone number:  
  +44 (0) 845 652 2525

SECTION 2: Hazards identification

· 2.1 Classification of the substance or mixture  
  Classification according to Regulation (EC) No 1272/2008 The substance is not classified according to the CLP regulation.

· 2.2 Label elements  
  Labelling according to Regulation (EC) No 1272/2008 Void  
  Hazard pictograms Void  
  Signal word Void  
  Hazard statements Void

· 2.3 Other hazards  
  Results of PBT and vPvB assessment  
  PBT: Not applicable.  
  vPvB: Not applicable.

SECTION 3: Composition/information on ingredients

· 3.1 Chemical characterisation: Substances  
  formula: \((\text{C}_3\text{H}_8\text{O}_3)^m\)  
  \(m: (92.1)\)  
  (Contd. on page 2)
Safety data sheet
According to 1907/2006/ EEC/ Article 31

Trade name: Glycerin
Glycerol
Glycerolum

· CAS No. Description
56-81-5 Glycerin
Glycerol
Glycerolum
· Identification number(s)
· EC number: 200-289-5

(Contd. of page 1)

SECTION 4: First aid measures

· 4.1 Description of first aid measures
· General information: No special measures required.
· After inhalation: Supply fresh air; consult doctor in case of complaints.
· After skin contact: Generally the product does not irritate the skin.
· After eye contact: Rinse opened eye for several minutes under running water.
· After swallowing: Rinse out mouth and then drink plenty of water. Consult a doctor.

· 4.2 Most important symptoms and effects, both acute and delayed
Dizziness
Coughing
Headache
Gastric or intestinal disorders
Cyanosis

· 4.3 Indication of any immediate medical attention and special treatment needed
No further relevant information available.

SECTION 5: Firefighting measures

· 5.1 Extinguishing media
· Suitable extinguishing agents:
  Fire-extinguishing powder
  Carbon dioxide
  Water
  Foam
  Use fire extinguishing methods suitable to surrounding conditions.

· 5.2 Special hazards arising from the substance or mixture
Formation of toxic gases is possible during heating or in case of fire.
Carbon monoxide (CO)
  vapours heavier than air. Development of hazardous combustion
gases or vapours possible in the event fire. Forms explosive mixtures
with air on intense heating. The following may develop in event of fire: Acrolein.

· 5.3 Advice for firefighters
· Protective equipment:
  Wear self-contained respiratory protective device.
  Wear fully protective suit.

(Contd. on page 3)
SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
Particular danger of slipping on leaked/spilled product.

6.2 Environmental precautions:
Dilute with plenty of water.
Do not allow to enter sewers/surface or ground water.

6.3 Methods and material for containment and cleaning up:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

6.4 Reference to other sections
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

SECTION 7: Handling and storage

7.1 Precautions for safe handling
Ensure good interior ventilation, especially at floor level. (Fumes are heavier than air).
Prevent formation of dust.

Information about fire - and explosion protection: No special measures required.

7.2 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:
Protect from humidity and water.
This product is hygroscopic.

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

SECTION 8: Exposure controls/personal protection

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

8.1 Control parameters

Ingredients with limit values that require monitoring at the workplace:

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>WEL</th>
<th>Long-term value</th>
</tr>
</thead>
<tbody>
<tr>
<td>56-81-5 Glycerin</td>
<td></td>
<td>10 mg/m³</td>
</tr>
<tr>
<td>Glycerol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glycerolum</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Additional information: The lists valid during the making were used as basis.
• 8.2 Exposure controls
- Personal protective equipment:
- General protective and hygienic measures:
The usual precautionary measures are to be adhered to when handling chemicals.
- Respiratory protection: Fresh air mask
- Protection of hands:
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
- Material of gloves
Nitrile rubber, NBR
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.
- Penetration time of glove material
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
In full contact
Layer thickness: 0.11 mm
Breakthrough time: >480 Min.
In splash contact
Layer thickness: 0.11 mm
breakthrough time: >480 min.
- Eye protection: Goggles recommended during refilling
- Body protection: Protective work clothing

SECTION 9: Physical and chemical properties

• 9.1 Information on basic physical and chemical properties
- General Information
- Appearance:
  - Form: Viscous
  - Colour: Colourless
- Odour:
  - odourless
- Odour threshold:
  - Not determined.
- pH-value (100 g/l) at 20 °C: 5
- Change in condition
  - Melting point/Melting range: 18.2 °C
  - Boiling point/Boiling range: 290 °C
- Flash point: 180 °C
- Flammability (solid, gaseous): Not applicable.
- Ignition temperature: ~ 400 °C
Trade name: Glycerin
Glycerol
Glycerolum

· Decomposition temperature: >290 °C
· Self-igniting: Not determined.
· Danger of explosion: Product does not present an explosion hazard.
· Explosion limits:
  Lower: Not determined.
  Upper: Not determined.
· Vapour pressure: Not determined.
· Density at 20 °C: 1.26 g/cm³
· Relative density Not determined.
· Vapour density Not determined.
· Evaporation rate Not determined.
· Solubility in / Miscibility with water: Fully miscible.
· Partition coefficient (n-octanol/water): Not determined.
· Viscosity:
  Dynamic: Not determined.
  Kinematic: Not determined.
· 9.2 Other information No further relevant information available.

SECTION 10: Stability and reactivity

· 10.1 Reactivity No further relevant information available.
· 10.2 Chemical stability
· 10.3 Possibility of hazardous reactions
  Reacts with peroxides.
  Reacts with acids, alkalis and oxidising agents.
· 10.4 Conditions to avoid No further relevant information available.
· 10.5 Incompatible materials:
  halogens, strong oxidizing agents, peroxi compounds, nitric acid/conc.
  sulfuric acid.
· 10.6 Hazardous decomposition products:
  Carbon monoxide and carbon dioxide
  Risk of ignition or formation of inflammable gases or vapors with:
  CrO₃, potassium permanganate.
· Additional information:
  hygroscopic.
  Forms explosive mixtures with air on intense heating.
SECTION 11: Toxicological information

- **11.1 Information on toxicological effects**
- **Acute toxicity** Based on available data, the classification criteria are not met.

**LD/LC50 values relevant for classification:**
<table>
<thead>
<tr>
<th></th>
<th>LD50</th>
<th>LC50</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral</td>
<td>12600 mg/kg (Rat)</td>
<td></td>
</tr>
<tr>
<td>Dermal</td>
<td>&gt;18700 mg/kg (Rabbit)</td>
<td></td>
</tr>
</tbody>
</table>

- **Primary irritant effect:**
  - **Skin corrosion/irritation** Based on available data, the classification criteria are not met.
  - **Serious eye damage/irritation** Based on available data, the classification criteria are not met.
  - **Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.

- **Additional toxicological information:**
  - After inhalation: Slight irritations of: respiratory tract, lungs.
  - Slight irritations of skin, mucous membranes.
  - After swallowing of large amounts: vomiting, gastric pain, headache, drowsiness, diarrhoea, cyanosis.

- **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
  - **Germ cell mutagenicity** Based on available data, the classification criteria are not met.
  - **Carcinogenicity** Based on available data, the classification criteria are not met.
  - **Reproductive toxicity** Based on available data, the classification criteria are not met.
  - **STOT-single exposure** Based on available data, the classification criteria are not met.
  - **STOT-repeated exposure** Based on available data, the classification criteria are not met.
  - **Aspiration hazard** Based on available data, the classification criteria are not met.

SECTION 12: Ecological information

- **12.1 Toxicity**
  - **Aquatic toxicity:** No further relevant information available.

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

- **Other information:**
  - The product is easily biodegradable.
  - Readily biodegradable (reduction: DOC>70 %; BOD>60%; BOD5 to COD >50%)

- **Behaviour in environmental systems:**
  - **Components:**
    - Distribution: log p(o/w): -2.66 (calculated).
    - No bioaccumulation is to be expected (log P(o/w) <1).

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

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

- **Ecotoxicological effects:**
  - **Remark:**
    - Fish toxicity: Lidus LC50: >10000 mg/l.
    - C.auratus LC50: >5000 mg/l/24h.
    - Daphnia toxicity: Daphnia magna EC50: >10000 mg/l/24h.
    - Maximum permissible toxic concentration:
      - Algeal toxicity: Sc. quadricauda IC5: >10000 mg/l/7d.
Trade name: Glycerin
Glycerol
Glycerolum

Bacterial toxicity: Ps.putida EC5: >10000 mg/l/16h.
Protozoa: E. sulcatum EC5: 3200 mg/l/72h.

- **Other information:**
  - BOD 71% from TOD/5d.
  - COD 95% from TOD.
  - TOD: 1.217 g/g.

- **Additional ecological information:**
- **General notes:**
  - Water hazard class 1 (German Regulation) (Assessment by list): slightly hazardous for water
  - Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

12.5 Results of PBT and vPvB assessment
- **PBT:** Not applicable.
- **vPvB:** Not applicable.

12.6 Other adverse effects No further relevant information available.

**SECTION 13: Disposal considerations**

- **13.1 Waste treatment methods**
  - **Recommendation**
    - Must be specially treated adhering to official regulations.
    - Smaller quantities can be disposed of with household waste.

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

- **Recommended cleansing agents:** Water, if necessary together with cleansing agents.

**SECTION 14: Transport information**

- **14.1 UN-Number**
  - ADR, ADN, IMDG, IATA: Void

- **14.2 UN proper shipping name**
  - ADR, ADN, IMDG, IATA: Void

- **14.3 Transport hazard class(es)**
  - ADR, ADN, IMDG, IATA
    - **Class:** Void

- **14.4 Packing group**
  - ADR, IMDG, IATA: Void

- **14.5 Environmental hazards:**
  - **Marine pollutant:** No

- **14.6 Special precautions for user**
  - Not applicable.
14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable.

Transport/Additional information: Not dangerous according to the above specifications.

UN "Model Regulation": Void

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- Directive 2012/18/EU
- Named dangerous substances - ANNEX I Substance is not listed.
- 15.2 Chemical safety assessment: A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This SDS is intended to provide a brief summary of our knowledge and guidance regarding the use of this material. The information contained here has been compiled from sources considered to be dependable and is accurate to the best of the Company’s knowledge. However, the information is provided without any representation or warranty, expressed or implied regarding its accuracy or correctness. The Company cannot assume responsibility for adverse events which may occur in the use and/or misuse of this product and expressly disclaims liability for loss, damage and/or expense arising out of or in any way connected with the handling, storage, use and/or disposal of this product.

Department issuing SDS:
Fagron UK
Quality Assurance
Contact: kathryn.mason@fagron.co.uk

Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
EINECS: European Inventory of Existing Commercial Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative

* Data compared to the previous version altered.