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

1.1 Product identifier
   Trade name : STAPA WM REFLEXAL 211/80 Aluminium Paste
   Product code : 050667GD0

1.2 Relevant identified uses of the substance or mixture and uses advised against
   This information is not available.

1.3 Details of the supplier of the safety data sheet
   Company : ECKART GmbH
             Guentersthal 4
             91235 Hartenstein
   Telephone : +499152770
   Telefax : +499152777008
   E-mail address of person responsible for the SDS : msds.eckart@altana.com

1.4 Emergency telephone number
   GBK Gefahrgut Büro GmbH, Ingelheim, Germany:
   From outside US: (001) 352-323-3500
   (First call in English, response in your language is possible)
   US & Canada (toll free) : 1-800-5355-053

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture
   Classification (REGULATION (EC) No 1272/2008)
   Not a dangerous substance according to GHS.

2.2 Label elements
   Labelling (REGULATION (EC) No 1272/2008)
   Not a dangerous substance or mixture according to the Globally Harmonised System (GHS).

   Additional Labelling

2.3 Other hazards
   Combustible Solids
   This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

STAPA WM REFLEXAL 211/80 Aluminium Paste

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Hazardous components

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS-No.</th>
<th>EC-No.</th>
<th>Index-No.</th>
<th>Registration number</th>
<th>Classification</th>
<th>Concentration (% w/w)</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium powder (stabilised)</td>
<td>7429-90-5</td>
<td>231-072-3</td>
<td>013-002-00-1</td>
<td>01-211-9529-243-45</td>
<td>Flam. Sol. 1; H228</td>
<td>&gt;= 50 - &lt;= 100</td>
</tr>
</tbody>
</table>

For explanation of abbreviations see section 16.

SECTION 4: First aid measures

4.1 Description of first aid measures

General advice: Move the victim to fresh air.
Do not leave the victim unattended.

No hazards which require special first aid measures.

If inhaled: If unconscious, place in recovery position and seek medical advice.
If symptoms persist, call a physician.

In case of skin contact: Wash off immediately with soap and plenty of water.

In case of eye contact: Immediately flush eye(s) with plenty of water.
Remove contact lenses.
If eye irritation persists, consult a specialist.

If swallowed: Keep respiratory tract clear.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.
If symptoms persist, call a physician.

4.2 Most important symptoms and effects, both acute and delayed
None known.

4.3 Indication of any immediate medical attention and special treatment needed
This information is not available.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

STAPA WM REFLEXAL 211/80 Aluminium Paste

Version 1.0  Revision Date: 27.01.2019  SDS Number: 102000031107  Print Date: 04.02.2019  Date of first issue: 27.01.2019

SECTION 5: Firefighting measures

5.1 Extinguishing media
- Suitable extinguishing media:
  - Dry sand
  - Special powder against metal fire
- Unsuitable extinguishing media:
  - Water
  - Foam
  - ABC powder
  - Carbon dioxide (CO2)

5.2 Special hazards arising from the substance or mixture

5.3 Advice for firefighters
- Special protective equipment for firefighters:
  - Use personal protective equipment.
  - Wear self-contained breathing apparatus for firefighting if necessary.
- Further information:
  - Standard procedure for chemical fires.
  - Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures
- Personal precautions:
  - Evacuate personnel to safe areas.
  - Use personal protective equipment.
  - Remove all sources of ignition.
  - Avoid dust formation.

6.2 Environmental precautions

6.3 Methods and material for containment and cleaning up
- Methods for cleaning up:
  - Use mechanical handling equipment.
  - Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).
  - Sweep up and shovel.
  - Do not flush with water.
  - Keep in suitable, closed containers for disposal.

6.4 Reference to other sections
- For personal protection see section 8.
SECTION 7: Handling and storage

7.1 Precautions for safe handling
Advice on safe handling: Keep away from heat and sources of ignition. Avoid dust formation. Ensure adequate ventilation.

For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area.

Advice on protection against fire and explosion: Keep away from open flames, hot surfaces and sources of ignition. Earthing of containers and apparatuses is essential.

Hygiene measures: General industrial hygiene practice.

7.2 Conditions for safe storage, including any incompatibilities
Requirements for storage areas and containers: Store in original container. Keep containers tightly closed in a cool, well-ventilated place. Keep container closed when not in use. Keep away from sources of ignition - No smoking.

Electrical installations / working materials must comply with the technological safety standards.

Further information on storage conditions: Protect from humidity and water. Do not allow to dry.

Advice on common storage: Do not store together with oxidizing and self-igniting products. Never allow product to get in contact with water during storage. Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid exothermic reactions.

Further information on storage stability: No decomposition if stored and applied as directed.

7.3 Specific end use(s)
This information is not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Value type (Form of exposure)</th>
<th>Control parameters</th>
<th>Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium powder</td>
<td>7429-90-5</td>
<td>TWA (Inhalable)</td>
<td>10 mg/m^3</td>
<td>GB EH40</td>
</tr>
</tbody>
</table>
Further information

The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m⁻³ 8-hour TWA of inhalable dust or 4 mg.m⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used.

<table>
<thead>
<tr>
<th>TWA (Respirable)</th>
<th>4 mg/m³</th>
<th>GB EH40</th>
</tr>
</thead>
</table>

Further information

For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust. The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or greater than 10 mg.m⁻³ 8-hour TWA of inhalable dust or 4 mg.m⁻³ 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used.

<table>
<thead>
<tr>
<th>TWA (inhalable dust)</th>
<th>10 mg/m³</th>
<th>GB EH40</th>
</tr>
</thead>
</table>

Further information

For the purposes of these limits, respirable dust and inhalable dust are those fractions of airborne dust which will be collected when sampling is undertaken in accordance with the methods described in MDHS14/3 General methods for sampling and gravimetric analysis of respirable and inhalable dust. The COSHH definition of a substance hazardous to health includes dust of any kind when present at a concentration in air equal to or
greater than 10 mg.m\(^{-3}\) 8-hour TWA of inhalable dust or 4 mg.m\(^{-3}\) 8-hour TWA of respirable dust. This means that any dust will be subject to COSHH if people are exposed above these levels. Some dusts have been assigned specific WELs and exposure to these must comply with the appropriate limit. Most industrial dusts contain particles of a wide range of sizes. The behaviour, deposition and fate of any particular particle after entry into the human respiratory system and the body response that it elicits, depend on the nature and size of the particle. HSE distinguishes two size fractions for limit-setting purposes termed ‘inhalable’ and ‘respirable’. Inhalable dust approximates to the fraction of airborne material that enters the nose and mouth during breathing and is therefore available for deposition in the respiratory tract. Respirable dust approximates to the fraction that penetrates to the gas exchange region of the lung. Fuller definitions and explanatory material are given in MDHS14/3. Where dusts contain components that have their own assigned WEL, all the relevant limits should be complied with. Where no specific short-term exposure limit is listed, a figure three times the long-term exposure should be used.

**Derived No Effect Level (DNEL) according to Regulation (EC) No. 1907/2006:**

<table>
<thead>
<tr>
<th>Substance name</th>
<th>End Use</th>
<th>Exposure routes</th>
<th>Potential health effects</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium powder</td>
<td>Workers</td>
<td>Inhalation</td>
<td>long term – local effects</td>
<td>3.72 mg/m³</td>
</tr>
<tr>
<td>(stabilised)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Consumers</td>
<td>Oral</td>
<td></td>
<td>long term – systemic effects</td>
<td>3.95 mg/kg</td>
</tr>
<tr>
<td>Workers</td>
<td>Inhalation</td>
<td></td>
<td>Long-term systemic effects</td>
<td>3.72 mg/m³</td>
</tr>
</tbody>
</table>

**Predicted No Effect Concentration (PNEC) according to Regulation (EC) No. 1907/2006:**

<table>
<thead>
<tr>
<th>Substance name</th>
<th>Environmental Compartment</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>aluminium powder</td>
<td>Fresh water</td>
<td>0.0749 mg/l</td>
</tr>
<tr>
<td>(stabilised)</td>
<td>clarification plant</td>
<td>20 mg/l</td>
</tr>
</tbody>
</table>

**8.2 Exposure controls**

**Personal protective equipment**

- **Eye protection**
  : Safety glasses

- **Hand protection**
  : Solvent-resistant gloves

- **Remarks**
  : Take note of the information given by the producer concerning permeability and break through times, and of special workplace conditions (mechanical strain, duration of contact). The exact break through time can be obtained from the protective glove producer and this has to be observed. Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time. Recommended preventive skin protection Skin should be...
washed after contact. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Skin and body protection:
- Long sleeved clothing
- Safety shoes
- Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection:
- Use suitable breathing protection if workplace concentration requires.

Environmental exposure controls
- Water: The product should not be allowed to enter drains, water courses or the soil.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Pasty solid</td>
</tr>
<tr>
<td>Colour</td>
<td>silver</td>
</tr>
<tr>
<td>Odour</td>
<td>characteristic</td>
</tr>
<tr>
<td>Odour Threshold</td>
<td>No data available</td>
</tr>
<tr>
<td>pH</td>
<td>No data available</td>
</tr>
<tr>
<td>Freezing point</td>
<td>No data available</td>
</tr>
<tr>
<td>Boiling point/boiling range</td>
<td>No data available</td>
</tr>
<tr>
<td>Flash point</td>
<td>No data available</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>No data available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Combustible Solids</td>
</tr>
<tr>
<td>Self-ignition</td>
<td>not auto-flammable</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Smoldering temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>No data available</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>Not explosive</td>
</tr>
</tbody>
</table>
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

STAPA WM REFLEXAL 211/80 Aluminium Paste

Version: 1.0
Revision Date: 27.01.2019
SDS Number: 102000031107
Print Date: 04.02.2019
Date of first issue: 27.01.2019

Not explosive

Oxidizing properties : No data available
Upper explosion limit / Upper flammability limit : No data available
Lower explosion limit / Lower flammability limit : No data available
Vapour pressure : No data available
Relative vapour density : No data available
Relative density : No data available
Density : 1.3 - 2.0 g/cm³
Bulk density : No data available
Water solubility : No data available
Solubility in other solvents : No data available
Partition coefficient: n-octanol/water : No data available
Decomposition temperature : No data available
Viscosity, dynamic : No data available
Viscosity, kinematic : No data available
Flow time : No data available

9.2 Other information
No data available

SECTION 10: Stability and reactivity

10.1 Reactivity
No decomposition if stored and applied as directed.

10.2 Chemical stability
No decomposition if stored and applied as directed.

10.3 Possibility of hazardous reactions
Hazardous reactions : Reacts with alkalis, acids, halogenes and oxidizing agents.
Contact with acids and alkalis may release hydrogen. Mixture reacts slowly with water resulting in evolution of hydrogen. Vapour/air-mixtures are explosive at intense warming.

Stable under recommended storage conditions.

10.4 Conditions to avoid

Conditions to avoid: Do not allow to dry.

No data available

10.5 Incompatible materials

Materials to avoid: Acids, Bases, Oxidizing agents, Highly halogenated compounds

10.6 Hazardous decomposition products

Contact with water or humid air: This information is not available.

Thermal decomposition: This information is not available.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity
Not classified based on available information.

Components:

aluminium powder (stabilised):
Acute inhalation toxicity: LC50 (Rat): > 5 mg/l
Exposure time: 4 h
Test atmosphere: dust/mist

Skin corrosion/irritation
Not classified based on available information.

Serious eye damage/eye irritation
Not classified based on available information.
Respiratory or skin sensitisation

Skin sensitisation
Not classified based on available information.

Respiratory sensitisation
Not classified based on available information.

Germ cell mutagenicity
Not classified based on available information.

Carcinogenicity
Not classified based on available information.

Reproductive toxicity
Not classified based on available information.

STOT - single exposure
Not classified based on available information.

STOT - repeated exposure
Not classified based on available information.

Aspiration toxicity
Not classified based on available information.

Further information

Product:
Remarks: No data available

SECTION 12: Ecological information

12.1 Toxicity

Product:

12.2 Persistence and degradability
No data available

12.3 Bioaccumulative potential
No data available

12.4 Mobility in soil
No data available

12.5 Results of PBT and vPvB assessment

Product:
Assessment: This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.
SAFETY DATA SHEET
according to Regulation (EC) No. 1907/2006

STAPA WM REFLEXAL 211/80 Aluminium Paste

Version 1.0  Revision Date: 27.01.2019  SDS Number: 102000031107  Print Date: 04.02.2019  Date of first issue: 27.01.2019

12.6 Other adverse effects

Product:
Additional ecological information : No data available

SECTION 13: Disposal considerations

European Waste Catalogue : 12 01 04 - non-ferrous metal dust and particles
European Waste Catalogue : 100321 - other particulates and dust (including ball-mill dust) containing dangerous substances

13.1 Waste treatment methods
Product : In accordance with local and national regulations.
Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.
In accordance with local and national regulations.

SECTION 14: Transport information

14.1 UN number
14.2 UN proper shipping name
14.3 Transport hazard class(es)
14.4 Packing group
14.5 Environmental hazards
14.6 Special precautions for user
Remarks : Not classified as dangerous in the meaning of transport regulations.

14.7 Transport in bulk according to Annex II of Marpol and the IBC Code
Not applicable for product as supplied.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
REACH - Candidate List of Substances of Very High : Not applicable
15.2 Chemical safety assessment

Full text of H-statements

H228 : Flammable solid.

Full text of other abbreviations

Flam. Sol. : Flammable solids
GB EH40 : UK. EH40 WEL - Workplace Exposure Limits
GB EH40 / TWA : Long-term exposure limit (8-hour TWA reference period)

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; AICS - Australian Inventory of Chemical Substances; ASTM - American Society for the Testing of Materials; bw - Body weight; CLP - Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECHA - European Chemicals Agency; EC-Number - European Community number; ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECS - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50% of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; RID - Regulations concerning the International Carriage of Dangerous Goods by Rail; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; SVHC - Substance of Very High Concern; TCSI - Taiwan Chemical Substance Inventory; TRGS - Technical Rule for
Hazardous Substances; TSCA - Toxic Substances Control Act (United States); UN - United Nations; vPvB - Very Persistent and Very Bioaccumulative

Further information
The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.