SAFETY DATA SHEET

1. Identification

GHS product identifier Ammonium Sulphate
Version No. 01
Issue date 11-August-2010
CAS No. 7783-20-2
Recommended use Fertilizer
Recommended Restrictions Not available.
Synonym(s) Sulphate of ammonia, Sulphate of ammonia (21(24+)), GAS, Granular ammonium sulphate
SDS number KFT_(NH4)2SO4_GHS_EN
Manufacturer information Koch Fertilizer Trading Sarl
20, route de Pre-Bois
Case Postale 1843
Geneva
Switzerland
+1 41 227 37 4223 or
+1 316 828 7672
Chemtrec +001 703-527-3887
(please reverse charges)

2. Hazards identification

GHS classification
Health hazards
Skin corrosion/irritation Category 3
Serious eye damage/eye irritation Category 2B
Specific target organ toxicity, single exposure Category 3 respiratory tract irritation

GHS label elements
Signal word Warning

Hazard statement
Causes mild skin irritation. Causes eye irritation. May cause respiratory irritation.

Precautionary statement
Prevention
Avoid breathing dust. Use only outdoors or in a well-ventilated area. Wash thoroughly after handling.

Response
If skin irritation occurs: Get medical advice/attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.

Storage
Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal
Dispose of contents/container in accordance with local/regional/national/international regulations.

Specific hazards
Dusts may irritate the respiratory tract, skin and eyes. May cause discomfort if swallowed.

3. Composition/information on ingredients

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS No.</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium sulphate</td>
<td>7783-20-2</td>
<td>100</td>
</tr>
</tbody>
</table>

Composition comments
All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume. This Safety Data Sheet is not a guarantee of product specification or NPK value(s). NPK content is on specified sales orders, customer invoices, or product specification sheets obtained from supplier.

4. First aid measures

First aid procedures
Inhalation
Move person to fresh air. Get medical attention if any discomfort continues.

Skin
Wash off with plenty of water. Get medical attention if irritation develops or persists.
5. Fire-fighting measures

Suitable extinguishing media
The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.

Specific hazards arising from the chemical
None known.

Protective equipment and precautions for firefighters
Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus operated in positive pressure mode and full protective clothing must be worn in case of fire. Move container from fire area if it can be done without risk.

6. Accidental release measures

Personal precautions
Avoid inhalation of dust. Avoid contact with skin and eyes. Avoid generation and spreading of dust. Wear protective clothing as described in Section 8 of this safety data sheet.

Environmental precautions
Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment
Stop the flow of material, if this is without risk. Collect and dispose of spillage as indicated in Section 13. Prevent entry into waterways, sewer, basements or confined areas.

Methods for cleaning up
Collect spill using a vacuum cleaner with a HEPA filter. Place in a designated labeled waste container, dispose as hazardous waste. Flush area with plenty of water.

7. Handling and storage

Handling
Avoid generation and spreading of dust. Avoid inhalation of dust and contact with skin and eyes. Use with adequate ventilation. Observe good industrial hygiene practices.

Storage
Keep container tightly closed. Store in a cool, dry, well-ventilated place. Packaging materials: stainless steel, synthetic. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls / personal protection

Occupational exposure limits
No exposure limits noted for ingredient(s).

Engineering controls
Provide adequate ventilation. The risk of inhalation of dust must be minimised as much as possible.

Personal protective equipment
Respiratory protection
In case of inadequate ventilation use suitable respirator. Use respiratory equipment with particle filter, type P2.

Hand protection
Risk of contact: Wear protective gloves (4-8h break through time). Rubber gloves are recommended. Suitable gloves can be recommended by the glove supplier.

Eye/face protection
Risk of contact: Wear dust goggles.

Skin protection
No skin protection is ordinarily required under normal conditions of use. In accordance with good industrial hygiene practices, precautions should be taken to avoid skin contact.

9. Physical and chemical properties

Physical state
Solid.

Colour
White.

Form
Crystals. Granules.

Odour
Odourless.

Odour threshold
Not available.

pH
5 - 6 (Concentration 5%)

Melting point/freezing point
> 235 °C (> 455 °F) (Decomposes.)

Boiling point
Not applicable.

Flash point
Not applicable.

Evaporation rate
Not applicable.

Flammability (Train fire)
Not applicable.

Flammability limits in air, lower
Not available.

\%
Not available.

Flammability limits in air, upper
Not available.

\%
Not available.

Vapour pressure
Not available.

Vapour density
> 1 (Air = 1)
Solubility (H2O): 76g / 100 ml (20°C). Easily soluble in cold water.
Octanol/H2O coeff: -5.1 at 25 °C
Auto-ignition temperature: Not available.
Decomposition temperature: Not available.
Viscosity: Not available.
Molecular weight: 132.14 g/mol
132.16
Molecular formula: (N-H4)2-S-O4
H8-N2-O4-S

10. Stability and reactivity
Chemical stability: Stable at normal conditions.
Possibility of hazardous reactions: Will not occur.
Conditions to avoid: Avoid dust formation. Exposure to heat and contact with sources of ignition.

11. Toxicological information

Toxicological data

<table>
<thead>
<tr>
<th>Components</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium sulphate (7783-20-2)</td>
<td>Acute Inhalation LC50 Rat: &gt; 1000 mg/m³ 8 Hours</td>
</tr>
<tr>
<td></td>
<td>Acute Oral LD50 Rat: 2840 mg/kg</td>
</tr>
</tbody>
</table>

Routes of exposure: Inhalation. Skin contact. Eye contact. Ingestion.
Acute effects: Dusts may irritate the respiratory tract, skin and eyes. May cause discomfort if swallowed.
Sensitisation: No data available.
Chronic effects: No data available
Carcinogenicity: No data available
Mutagenicity: Non-mutagenic for bacteria and/or yeast.
Reproductive effects: No data available.
Teratogenicity: No data available
Epidemiology: No data available
Skin corrosion/irritation: Causes mild skin irritation.
Serious eye damage/eye irritation: Causes eye irritation.
Specific target organ toxicity - single exposure: May cause respiratory irritation.
Specific target organ toxicity - repeated exposure: None known.
Other information: Not available.

12. Ecological information

Ecotoxicological data

<table>
<thead>
<tr>
<th>Components</th>
<th>Test results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium sulphate (7783-20-2)</td>
<td>EC50 Water flea (Ceriodaphnia dubia): 52 - 67 mg/l 48 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Pink salmon (Oncorhynchus gorbuscha): 0.068 mg/l 96 hours</td>
</tr>
<tr>
<td></td>
<td>LC50 Rainbow trout, donaldson trout (Oncorhynhus mykiss): 35.2 - 43.8 mg/l 96 Hours</td>
</tr>
</tbody>
</table>

Ecotoxicity: The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Environmental effects: It is recommended that the use of ammonium sulfate as a fertilizer is taken into account when assessing the exposure of nitrite and nitrate to humans through drinking water.
Persistence and degradability: There is no evidence for photodegradation of ammonium sulfate. However, ammonium sulfate may be formed in atmospheric aerosols. The product itself and its products of degradation are not toxic.
Bioaccumulation
Not expected to bioaccumulate on the basis of the low octanol-water partition coefficient.

Mobility
The product is water soluble and may spread in water systems.

13. Disposal considerations
Disposal methods
Dispose in accordance with all applicable regulations.
Contaminated packaging
Dispose in accordance with applicable federal, state, and local regulations.

14. Transport information
ADR
Not regulated as dangerous goods.
IATA
Not regulated as dangerous goods.
IMDG
Not regulated as dangerous goods.
RID
Not regulated as dangerous goods.

15. Regulatory information
Inventory status

<table>
<thead>
<tr>
<th>Country(s) or region</th>
<th>Inventory name</th>
<th>On inventory (yes/no)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Australian Inventory of Chemical Substances (AICS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Domestic Substances List (DSL)</td>
<td>Yes</td>
</tr>
<tr>
<td>Canada</td>
<td>Non-Domestic Substances List (NDSL)</td>
<td>No</td>
</tr>
<tr>
<td>China</td>
<td>Inventory of Existing Chemical Substances in China (IECSC)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European Inventory of Existing Commercial Chemical Substances (EINECS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Europe</td>
<td>European List of Notified Chemical Substances (ELINCS)</td>
<td>No</td>
</tr>
<tr>
<td>Japan</td>
<td>Inventory of Existing and New Chemical Substances (ENCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>Korea</td>
<td>Existing Chemicals List (ECL)</td>
<td>Yes</td>
</tr>
<tr>
<td>New Zealand</td>
<td>New Zealand Inventory</td>
<td>Yes</td>
</tr>
<tr>
<td>Philippines</td>
<td>Philippine Inventory of Chemicals and Chemical Substances (PICCS)</td>
<td>Yes</td>
</tr>
<tr>
<td>United States &amp; Puerto Rico</td>
<td>Toxic Substances Control Act (TSCA) Inventory</td>
<td>Yes</td>
</tr>
</tbody>
</table>

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

16. Other information
Disclaimer
NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.

Revision date
11-August-2010