MATERIAL SAFETY DATA SHEET

KOCH FERTILIZER TRADING Sárl

1. Product and Company Identification

Material name **Monoammonium Phosphate**

Revision date 04-14-2011

Version # 01

CAS # 7722-76-1

MSDS Number KFT_NH4H2PO4_NA_EN

Synonym(s) MAP, Monoammonium dihydrogen phosphate, Ammonium dihydrogenorthophosphate

Manufacturer/Supplier

Koch Fertilizer Trading Sarl
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Case Postale 1843
Geneva, Switzerland
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Emergency

For Chemical Emergency
Call CHEMTREC day or night
USA/Canada - 1.800.424.9300
Outside USA/Canada 1.703.527.3887
(collect calls accepted)

2. Hazards Identification

Physical state Solid.

Appearance Granules.

Emergency overview Dust may cause eye, skin and respiratory tract irritation.

OSHA regulatory status This material is not considered hazardous by the OSHA Hazard Communication Standard, OSHA 29 CFR 1910.1200.

Potential health effects

Routes of exposure Inhalation. Skin contact. Eye contact. Ingestion.

Eyes Dust may irritate the eyes.

Skin Dust may irritate skin.

Inhalation Dust may irritate the respiratory system.

Ingestion May irritate and cause stomach pain, vomiting, diarrhea and nausea.

Signs and symptoms Dusts may irritate the respiratory tract, skin and eyes. Symptoms can include irritation, redness, scratching of the cornea, and tearing.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Monoammonium phosphate	7722-76-1	> 80
Ammonium Sulfate	7783-20-2	< 10
Diammonium hydrogenorthophosphate	7783-28-0	< 10
Ammonium magnesium orthophosphate (Struvite)	7785-21-9	< 10

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

Eye contact Do not rub eye. Remove contact lenses, if present and easy to do. Flush thoroughly with water. If irritation occurs, get medical assistance.

Skin contact	Wash off with plenty of water. Get medical attention if irritation develops or persists.
Inhalation	Move person to fresh air. Get medical attention if any discomfort continues.
Ingestion	Rinse mouth thoroughly if dust is ingested. Get medical attention if any discomfort occurs.
Notes to physician	Treat symptomatically.
General advice	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties	During fire, gases hazardous to health may be formed.
Extinguishing media	
Suitable extinguishing media	The product is non-combustible. Use fire-extinguishing media appropriate for surrounding materials.
Protection of firefighters	
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.
Fire fighting equipment/instructions	Not available.
Specific methods	Move container from fire area if it can be done without risk.
Hazardous combustion products	Phosphorus oxides. Nitrogen oxides. Ammonia.

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.
Methods for containment	Stop the flow of material, if this is without risk. Prevent entry into waterways, sewer, basements or confined areas. Collect and dispose of spillage as indicated in Section 13 of the MSDS.
Methods for cleaning up	Collect spill using a vacuum cleaner with a HEPA filter. Flush area with plenty of water.
Other information	Clean up in accordance with all applicable regulations.

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	This product when stored in a confined, unventilated space/hold can give off ammonia or other odour and lead to the depletion of oxygen within this space and other confined spaces. Keep container tightly closed. Store in a cool, dry, well-ventilated place. Store away from incompatible materials.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Dust (-)	TWA	3 mg/m3	Respirable particles.
		10 mg/m3	Inhalable particles.

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value	Form
Dust (-)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
	TWA	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
Dust (-)	TWA	10 mg/m3	Total particulate.

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	Form
		3 mg/m3	Respirable particles.

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
Dust (-)	TWA	10 mg/m3	Total dust.
		3 mg/m3	Respirable fraction.

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
Dust (-)	TWA	3 mg/m3	Respirable particles.
		10 mg/m3	Inhalable particulate.

Canada. Quebec OELS. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value	Form
Dust (-)	TWA	10 mg/m3	Total dust.

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

Personal protective equipment

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. Wear protective gloves. Suitable gloves can be recommended by the glove supplier.

Respiratory protection In case of inadequate ventilation or risk of inhalation of dust, use suitable respiratory equipment with particle filter.

General hygiene considerations Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical & Chemical Properties

Appearance Granules.

Color Grey. Brown.

Odor Slight acidic.

Odor threshold Not available.

Physical state Solid.

Form Granules.

pH 4.5 (1% solution)
5.4 - 10 (5% solution)

Melting point Not available.

Freezing point Not available.

Boiling point Not relevant

Flash point Not relevant

Flammability limits in air, upper, % by volume Not relevant

Flammability limits in air, lower, % by volume Not relevant

Vapor pressure Not available.

Vapor density Not relevant

Specific gravity Not relevant

Solubility (water) 99.5 - 99.999 %

Partition coefficient (n-octanol/water) Not available.

Auto-ignition temperature Not available.

Decomposition temperature	Not available.
Bulk density	64 - 75 lb/ft³ 950 - 1,050 kg/m3

10. Chemical Stability & Reactivity Information

Chemical stability	Stable at normal conditions. Decomposes at high temperatures giving ammonia and polyphosphoric acid.
Conditions to avoid	Avoid dust formation. High temperatures.
Incompatible materials	Strong oxidizing agents. Strong acids. Strong bases. Magnesium.
Hazardous decomposition products	Phosphorus oxides. Nitrogen Oxides. Ammonia.
Possibility of hazardous reactions	Will not occur.

11. Toxicological Information

Toxicological data

Components	Test Results
Ammonium Sulfate (7783-20-2)	Acute Inhalation LC50 Rat: > 1,000 mg/m³ 8 Hours
	Acute Oral LD50 Rat: 2,840 mg/kg

Acute effects	Dusts may irritate the respiratory tract, skin and eyes. Ingestion may cause dizziness, nausea and vomiting. Large quantities: May cause effects on the calcium metabolism, resulting in cardiac disorders and impaired functions. However, ingestion is not likely to be a primary route of occupational exposure.
Sensitization	None known.
Chronic effects	Frequent inhalation of dust over a long period of time increases the risk of developing lung diseases.
Carcinogenicity	Not classified.
Epidemiology	No epidemiological data is available for this product.
Mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Reproductive effects	Contains no ingredient listed as toxic to reproduction.

12. Ecological Information

Ecotoxicological data

Components	Test Results
Ammonium Sulfate (7783-20-2)	EC50 Water flea (Ceriodaphnia dubia): 52 - 67 mg/l 48 hours
	LC50 Pink salmon (Oncorhynchus gorbuscha): 0.068 mg/l 96 hours
	LC50 Rainbow trout, donaldson trout (Oncorhynhus mykiss): 35.2 - 43.8 mg/l 96 Hours
Diammonium hydrogenorthophosphate (7783-28-0)	LC50 Mozambique tilapia (Tilapia mossambica): 0.12 mg/l 96 hours

Ecotoxicity	The product components are 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	Fertilisers, particularly those containing nitrogen and/or phosphorus, can stimulate weed and algal growth in static surface waters. Nitrogen fertilisers may contain or form nitrate which can contaminate surface and ground-water. High nitrate concentrations may render the water unsuitable for human and livestock consumption.
Persistence and degradability	No data available.
Bioaccumulation / Accumulation	No data available.
Partition coefficient (n-octanol/water)	Not available.

Mobility in environmental media The product is soluble in water.

13. Disposal Considerations

Disposal instructions Dispose in accordance with all applicable regulations.

Contaminated packaging Dispose of in accordance with local regulations.

14. Transport Information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

TDG

Not regulated as dangerous goods.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
CERCLA/SARA Hazardous Substances - Not applicable.

TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D)

Not regulated.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

None

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

Section 302 extremely hazardous substance (40 CRF 355, Appendix A) No

Section 311/312 (40 CFR 370) No

Drug Enforcement Administration (DEA) (21 CFR 1308.11-15) Not controlled

WHMIS status Non-controlled

Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

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

State regulations This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

US - Massachusetts RTK - Substance: Listed substance

Ammonium Sulfate (CAS 7783-20-2) Listed.

US - New Jersey RTK - Substances: Listed substance

Ammonium Sulfate (CAS 7783-20-2) Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

Ammonium Sulfate (CAS 7783-20-2) Listed.

16. Other Information

Further information HMIS® is a registered trade and service mark of the NPCA.

HMIS® ratings
Health: 1
Flammability: 0
Physical hazard: 0

NFPA ratings
Health: 1
Flammability: 0
Instability: 0

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