KNK		**Date: 01/05/97**
		Serial Number: sds-422

SECTION 1: IDENTIFICATION

SECTION 2: HAZARDS IDENTIFICATION

Visual Signs (Classified by GHS):

Signal Word: Warning

Dangers type

Toxic ☐ flammable ■ Inflammatory ■ Corrosive ☐ Oxidizer ☐ Explosive ☐

Dangers Description: dangerous in case of eye contact, skin contact and swallowed. Inhalation may cause pulmonary stimulation.

Protective Measures: N.Av.

Other Dangers: N.Av.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: N.Av

Molecular Weight: N.Av.

Ingredient name	CAS Number	EC Number	Weight %
Sulphur	7704-34-9	231-722-6	99.5-99.9%
Moisture	7732-18-5	231-791-2	Max 0.8%
Hydrocarbon	N.Av.	N.Av.	Max 0.09%

Acid(such as H_2SO_4)	N.Av.	N.Av.	Max 0.02%
Ash	N.Av.	N.Av.	Max 0.15%

Toxicity Component Information:

LC50 (granular Sulfur)(rat-inhalation- 4hours) : >5430 mg/m^3

LD50 (Granular sulfur)(rat-skin) : >2000 mg/kg

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General Advice:

- **First-aid measures after inhalation:** Remove to fresh air. Get medical attention for any breathing difficulty.
- **First-aid measures after skin contact:** Wash thoroughly with mild soap & water.
- **First-aid measures after eye contact:** remove contact lenses if available. Irritate thoroughly with copious quantity of plain water.
- **First-aid measures after ingestion:** If swallowed, induce vomiting only if victim is conscious. Do not attempt to give anything by mouth to unconscious person.

Signs and Symptoms (Acute / Delayed): N.Av.

Indication of Any Immediate Medical Attention and Special Treatment Needed: N.Av.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable extinguishing media: water spray for large fires, dry chemical for small fires.

Unsuitable extinguishing media: Do not scatter spilled material with high pressure water streams.

Special hazards during burning: Burning Sulphur evolves Sulphur dioxide.

Advice for Firefighters: Because burning Sulphur evolves Sulphur dioxide, breathing apparatus or gas masks approved for use in acid-gas atmosphere should be used. Fumes from unprotected Sulphur fires shall be avoided, if possible, by approaching for the upwind side. A self-contained breathing apparatus should be used to avoid inhalation of toxic fumes. Evacuate area and fight fire from a safe distance.

Other Information: Cool containing vessels with flooding quantities of water until well after fire is out.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment: Ensure adequate ventilation. Avoid dust formation. Do not get in eyes. Use personal protective equipment. Remove all sources of ignition. Take precautionary measures against static discharges. Wash thoroughly after handling.

Emergency Procedures: Wash face, hands and any exposed skin thoroughly after handling. Get medical advice/attention.

Environmental Precautions: Contain spilled material ensure that the spilled material does not enter sewers, wells or watercourses which may degrade water quality. Recover and recycle if possible.

Methods and Material for Containment and Cleanup: Use appropriate tools to put the spilled material in a convenient container for disposal. For landfill disposal, mix with limestone 3 times the weight of Sulphur. Ensure disposal complies with local regulations.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling: Keep away from sources of ignition and incompatible material such as combustible materials. Take precautions against electrostatic discharges. Avoid contact with skin and eyes. Do not breathe fumes or vapors. Keep out of reach of children.

Conditions for Safe Storage, Including any Incompatibilities: Solid becomes corrosive to metals when stored wet. Sulphur/bentonite fertilizer will physically break down when exposed to moisture or water.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Occupational Exposure Limits (TLV): TWA:15 mg/m^3 STEL:N.Av. ceiling: N.Av.

Contact control

Engineering Controls: Use process enclosures, local exhaust ventilation if dusty condition prevails.

Personal Protective Equipment

Eye/face Protection: Use Safety glasses with side-shields.

Skin Protection: Use Long sleeved clothing. Impervious gloves.

Respiratory Protection: Dust type respirators shall be provided for dusty condition. Breathing apparatus must be available for emergency use in case of fire.

Other protective equipment: cotton gloves, leather gloves

Environmental Exposure Controls: do not spill into environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

General Information

Physical State: Solid (compressed)

Color/ Odor/ Appearance: yellow/ sulfur is odorless but impurities such as hydrocarbon can have an oil or rotten egg smell.

Smell threshold: N.Aa

pH: N.Aa

Melting point: 112-120 °C

Initial boiling point and boiling range: 444-447 °C

Flash point: 168-207 °C

Evaporation rate: N.Aa

Flammability (solid, gas): N.Aa

Upper flammability or explosive limits: 35 gm/ m3
lower flammability or explosive limits: 1400 gm/ m3
Vapor pressure: 0.1333 Pa at 20 °C
Vapor density: N.Av.
Relative density: 2.07 g/cm^3 at 25 °C
Solubility(ies): not soluble
Auto-ignition temperature: 240 °C
Decomposition temperature: N.Aa
Viscosity: 8 mm^2/s at 140 °C
Explosive features: N.Aa
Oxidation features: N.Aa
Other information
Minimum ignition temperature: N.Aa
Conductivity: N.Aa
Corrosion: N.Aa

SECTION 10: STABILITY AND REACTIVITY

Reactivity: not oxidizing with glass.
Chemical stability: stable
Conditions to Avoid: The main hazards are fire and dust explosion.
Incompatible materials: Incompatible with oxidizing agents; metals, Ammoniac, Ammonium perchlorate, Ammonium nitrate.
Hazardous Decomposition Products: N.Av.

SECTION 11: TOXICOLOGICAL INFORMATION

Toxic Effect
LC50: N.Av
LD50: N.Av.
Skin irritation/corrosion: Frequent or prolonged contact may irritate the skin.
Eye irritation: Sulfur dust is capable of irritating the inner surfaces of the eyelids.
Respiratory irritation: Inhalation-Sulphur dust may irritate the mucous membranes of the respiratory passage.
Cell mutagenesis: N.Aa
Genetic toxicity in laboratory conditions: N.Aa
Carcinogenicity: N.Av.
Reproductive toxicity: N.Aa
Specific Toxicity for a target organ-a call: N.Aa
Specific Toxicity of a target organ-Multi Contact: N.Aa
Respiratory dangers: N.Aa
Other Information
Persons, who are constantly at risk of breathing dusty air, can complain of mucous membrane irritation (sore throat), headaches and dizziness, agitation or drowsiness, problems with the digestive system, dry skin and dermatorrhexis.

SECTION 12: ECOLOGICAL INFORMATION

Environmental Effects: N.Av.
Persistence and Degradability: no dangerous particles from decomposing.
Biological potential: N.Aa
Mobility in the Soil: N.Aa
Other Adverse Effects: N.Av.

SECTION 13: DISPOSAL CONSIDERATIONS

Methods of Disposal of Waste Residue: refer to a disposal company. Solve in a flammable solvent and burn in an incinerator having scruber.
Disposal special container: N.Aa
Disposal precautions: obey local laws.

SECTION 14: TRANSPORT INFORMATION

UN number: 1350
Transport hazard class (es) :4.1
Land transport (ADR / RID): 4.1
Transport at Inland Waterway (ADR): N.Av
Aviation transport (IATA): N.Av
Maritime Transport (IMDG): N.Av
Packing group
Land transport (ADR / RID): N.Aa
Transport at Inland Waterway (ADR): N.Aa
Aviation transport (IATA): N.Aa
Maritime Transport (IMDG): N.Aa
Environmental hazards
Land transport (ADR / RID): N.Aa
Transport at Inland Waterway (ADR): N.Aa
Aviation transport (IATA): N.Aa
Maritime Transport (IMDG): N.Aa
Special care for the user
Land transport (ADR / RID): N.Aa
Transport at Inland Waterway (ADR): N.Aa
Aviation transport (IATA): N.Aa
Maritime Transport (IMDG): N.Aa
Transport in the presence of other materials based on Annex II of MARPOL 73/78 and the IBC Code
N.Ap

SECTION 15: REGULATORY INFORMATION

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

EU Regulations

N.Aa

National Regulations

N.Aa

Chemical Safety Assessment

R warnings: N.Aa

S warnings: N.Aa

NFPA classification:

SECTION 16: OTHER INFORMATION

Other Relevant Information

This SDS and the information it contains is offered to you in good faith as accurate. We believe that information to be correct but cannot guarantee is accuracy or completeness. Health and safety precautions in this data sheet may not be adequate for all individual and/or situations. It is the user's obligation to evaculate and use this this product safely and to comply with all applicable laws and regulations. Now statement made in this data sheet shall be construed as a permission or recommendation for the use of any product in a manner that might infringe existing patents.