



Tiger-Sul Products

"Innovation. Excellence. Performance"



MATERIAL SAFETY DATA SHEET

TIGER 90CR

July 2005

SECTION I GENERAL INFORMATION

Tiger-Sul Products
6444 -42 St. S.E.
Calgary, AB T2C 2V1

Telephone: (403) 279-2616
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Trade Name (Common Name or Synonym) - Sulfur Fertilizer (**TIGER 90CR**)

Formula: 90% Sulfur Molecular Weight: N/A
10% Bentonite Clay

SECTION II TRANSPORTATION REQUIREMENTS (Non Regulated as per following exemptions/provisions, and observations):

US and Canadian Shipments: non regulated as per schedule 2 section 33(b) Exemption for sulphur.

International Shipments:

AIR (IATA): Exempted under Special Provision A 105 **SEA (IMDG):** Exempted as per Sulfur Observations Part 1 & 2

Appearance: Specifically formed product in the shape of pastilles.

TRANSPORTATION EMERGENCIES: call collect **CANUTEC** 613-996-6666 (24 hours).

WHMIS: non-controlled product in accordance with sub-paragraph 13(a)(i-iv) or paragraph 14 (a) of the Hazardous Products Act.

SECTION III FIRST AID MEASURES

Skin: Wash with mild soap and water.
Eyes: Irrigate thoroughly with copious quantities of plain water.
Inadequate irrigation may increase the irritation. Do not use Boric Acid.

SECTION IV HAZARDS INFORMATION

Inhalation: Sulfur dust may irritate the mucous membranes of the respiratory passages.
Ingestion: Solid sulfur is virtually non-toxic. It can be taken internally in fairly large doses without injury.

Skin: In some individuals, sulfur dust has an irritant action, which may be aggravated by perspiration or moisture.
Eyes: Sulfur dust is capable of irritating the inner surfaces of the eyelids.

Permissible Concentration: **None established.**

Unusual Chronic Toxicity: **N/A**

Flash Point <u> </u> °C	Auto Ignition <u> </u> °C	Flammable Limits in Air (% by VOL)
Pure Liquid S,	Dust clouds 190 °C,	Minimum explosion concentration is approximately 35 gm per cu. metre (0.035 oz per cu. ft.). Maximum explosive concentration lies between 1000-2000 (probably about 1400 gm/m ³ (1.4 oz per cu. ft.).
188 °C, (370 °F)	(374 °F)	
Impure Liquid S,	Undispersed dust,	
168 °C, (335 °F)	220 °C, (428 °F)	

***Unusual Fire and Explosion Hazards:**

Dust suspended in air is readily ignited by flame, static electricity or friction spark. Every reasonable step must be taken to minimize dust formation. Dust tight casings should be equipped with explosion relief vents. Sparkless electrical equipment is recommended. Handling equipment must be grounded or bonded to avoid static electricity. Keep away from sources of flame or sparks. Detailed recommendations in Manufacturing Chemists Association SD-74 and National Safety Council 612 Bulletins covering "Sulfur" should be followed when handling Tiger 90.

Explosive Limits: **LEL 35 gm/m³**
 UEL 1400 gm/m³

SECTION V PRECAUTIONS/PROCEDURES

* Fire Extinguishing Agents Recommended:

1. A fine water spray or fog is recommended.
2. CO₂ or dry chemical.
3. Small fires may be smothered with sand or solid sulfur.

* Fire Extinguishing Agents to Avoid:

Hoses and extinguishers with pressure streams should be avoided where solid sulfur is dusty or where it may create a further hazard by raising more dust clouds.

* Special Fire Fighting Precautions:

Because burning sulfur evolves sulfur dioxide, breathing apparatus or gas masks approved for use in acid-gas atmosphere should be used. Fumes from unprotected sulfur fires shall be avoided, if possible, by approaching for the upwind side.

* Ventilation:

Local exhaust if dusty conditions prevail.

* Normal Handling:

Avoid breathing dust and keep clothing as free from dust as possible.

* Storage:

Solid becomes corrosive to metals when stored wet. Sulfur / bentonite fertilizer will physically break down when exposed to moisture or water.

* Spill or Leak:

Shovel into disposal containers or cover with tarp. For landfill disposal, mix with limestone 3 times the weight of sulfur.

* Special: Precautions/Procedures/Label Instructions.

Eye wash equipment near the work area.

SECTION VI PERSONAL PROTECTIVE EQUIPMENT

* Respiratory Protection:

Dust-type respirators shall be provided for dusty conditions. Breathing apparatus must be available for emergency use in case of fire.

* Eyes and Face:

Dust-tight goggles with plastic or rubber frames may be helpful in dusty conditions.

* Hands, Arms and Body:

Workers whose skin may be sensitive to sulfur dust should button collars, roll sleeves down, and gather trousers at the ankle. Gloves may be helpful.

* Other Clothing and Equipment:

Hard hat and safety shoes. Fire-retardant fabric is recommended. Sulfur impregnated clothing should not be worn.

SECTION VII PHYSICAL DATA

Material is (at normal conditions):

Liquid Solid Gas

Appearance and Odour

Pale copper in Colour. May have slight sulfur odour. Pellet or pastille in shape.

Boiling Point

444 °C (832 °F)

Specific Gravity

Solid, 2.07 gm/ml

Vapour Density

> 1

Solubility in Water

(% by weight)

Insoluble

pH

Neutral when dry

Vapour Pressure

(mm Hg at 20 °C)

Solid: Less than 0.0001 mm. Hg at 20° C (68 °F).

Evaporation Rate

(Butyl Acetate =)

(Ether =)

N/A

% Volatiles by Volume

N/A

Melting Point

119 °C (246 °F)

SECTION VIII REACTIVITY DATA

Stability

Unstable Stable

Conditions to Avoid

The main hazards are fire and dust explosions.

Hazardous Polymerization Conditions to Avoid.

May occur Will not occur.

SECTION IX HAZARDOUS INGREDIENTS (Mixtures Only)

* Material or Components:

Mixtures with chlorates, nitrates or other oxidizing agents may be explosive. Sulfur will react with alkalis or alkaline earths.

NOTICE:

The data and information presented herein are based upon tests, research and reports which are considered by us to be reliable and believed to be accurate. The data and information are presented without warranty, guarantee or liability on our part, and are presented to the customer for his own consideration, investigation and verification.