

# SAFETY DATA SHEET

Date Issued : 4/6/2012  
MSDS No : M-1000-265

## Sulfur pieces

### 1. PRODUCT AND COMPANY IDENTIFICATION

**PRODUCT NAME:** Sulfur pieces  
**GENERAL USE:** Physical vapor deposition of thin films

#### MANUFACTURER

Kurt J Lesker Company  
United States  
1925 Route 51  
Jefferson Hills, PA 15025  
**Customer Service:** 412-387-9200  
**E-Mail:** msds@lesker.com  
Kurt J Lesker Company LTD  
United Kingdom  
15-16 Burgess Road  
Hastings, East Sussex, TN35 4NR  
England  
**Customer Service:** +44 (0) 1424 458100

#### 24 HR. EMERGENCY TELEPHONE NUMBERS

24-Hour Emergency Response provided by  
3E Global Incident Response Hotline

When calling, refer to Kurt J Lesker Company  
Global Response Access Code: 333594

North America [USA, Canada, Mexico]: 1-866-519-4752  
Mainland China: (+86) 4001 2001 74  
Europe: {int'l call prefix}-1-760-476-3961  
Asia Pacific: {int'l call prefix}-1-760-476-3960  
Middle East & Africa: {int'l call prefix}-1-760-476-3959

### 2. HAZARDS IDENTIFICATION

#### GHS CLASSIFICATIONS

##### Health:

Skin Irritation, Category 2

#### GHS LABEL



Exclamation  
mark

#### HAZARD STATEMENTS

H315: Causes skin irritation.

#### PRECAUTIONARY STATEMENT(S)

##### Prevention:

P280: Wear protective gloves/protective clothing/eye protection/face protection.

##### Response:

P302+P352: IF ON SKIN: Wash with plenty of soap and water.

#### EMERGENCY OVERVIEW

**PHYSICAL APPEARANCE:** Yellow solid

**IMMEDIATE CONCERNS:** Negligible fire or explosion hazard in bulk form. Powdered material may form

explosive dust-air mixtures.

### POTENTIAL HEALTH EFFECTS

**EYES:** Contact may cause eye irritation.

**SKIN:** Causes skin irritation.

**INGESTION:** May be harmful if swallowed.

**INHALATION:** May be harmful if inhaled. May cause respiratory irritation.

### REPRODUCTIVE TOXICITY

**REPRODUCTIVE EFFECTS:** Not Available

**TERATOGENIC EFFECTS:** Not Available

**CARCINOGENICITY:** Not listed

**MUTAGENICITY:** Not Available

**ROUTES OF ENTRY:** Inhalation, ingestion, eye contact, or skin contact.

**IRRITANCY:** May cause irritation of skin, eyes, and respiratory tract.

**PHYSICAL HAZARDS:** This substance is not considered hazardous in the form supplied. Dusts at sufficient concentrations can form explosive mixtures with air.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Wt.%	CAS
Sulfur	100	7704-34-9

## 4. FIRST AID MEASURES

**EYES:** Immediately flush eyes with plenty of water. Get medical attention, if irritation persists.

**SKIN:** Wash with soap and water. Get medical attention if irritation develops or persists.

**INGESTION:** Rinse mouth. Get medical advice/attention.

**INHALATION:** Remove to fresh air. If not breathing, give artificial respiration or give oxygen by trained personnel. Seek immediate medical attention.

### SIGNS AND SYMPTOMS OF OVEREXPOSURE

**CHRONIC EFFECTS:** Not Available

## 5. FIRE FIGHTING MEASURES

**FLAMMABLE CLASS:** Combustible.

**EXTINGUISHING MEDIA:** Use alcohol foam, carbon dioxide, or water spray when fighting fires involving this material.

**EXPLOSION HAZARDS:** Dusts at sufficient concentrations can form explosive mixtures with air.

**FIRE FIGHTING PROCEDURES:** As in any fire, wear self-contained breathing apparatus pressure-demand, (MSHA/NIOSH approved or equivalent) and full protective gear.

**HAZARDOUS DECOMPOSITION PRODUCTS:** Sulfur oxides

## 6. ACCIDENTAL RELEASE MEASURES

**SMALL SPILL:** Clean up spills immediately, observing precautions in Protective Equipment section.

**LARGE SPILL:** Collect spilled material in appropriate container. Spill may be reportable . Consult section 15 for Reportable Quantities.

### ENVIRONMENTAL PRECAUTIONS

**WATER SPILL:** This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water.

**GENERAL PROCEDURES:** Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Eliminate all ignition sources if safe to do so. Avoid formation of dust. Provide appropriate exhaust ventilation where dust is formed. Avoid breathing (dust, vapor, mist, gas). Practice good chemical hygiene during and after use. Avoid release to the environment.

## 7. HANDLING AND STORAGE

**GENERAL PROCEDURES:** To avoid risks to human health and the environment, comply with the instructions for use.

**HANDLING:** Keep away from heat and flame. Keep container closed when not in use. Remove contaminated clothing and wash before reuse. Wash hands before eating and wash before reuse. Wash thoroughly after handling.

**STORAGE:** Keep container closed when not in use. Store in a cool dry place.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

**ENGINEERING CONTROLS:** Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits.

### PERSONAL PROTECTIVE EQUIPMENT

**EYES AND FACE:** Wear safety glasses with side shields (or goggles) and a face shield.

**SKIN:** Wear protective gloves/protective clothing/eye protection/face protection. Wash contaminated clothing before reuse.

**RESPIRATORY:** If ventilation is inadequate and this material is handled at elevated temperatures or dusts/fumes/mists are generated a NIOSH/MSHA approved air purifying respirator with a manufacturers approved cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

**WORK HYGIENIC PRACTICES:** Practice good chemical hygiene during and after use.

**COMMENTS:** There are no established workplace exposure limits for components of this product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

**PHYSICAL STATE:** Solid

**ODOR:** Rotten egg

**COLOR:** Yellow

**pH:** NA = Not Applicable

**PERCENT VOLATILE:** NA = Not Applicable

**FLASH POINT AND METHOD:** 207°C

**FLAMMABLE LIMITS:** NA = Not Applicable

**AUTOIGNITION TEMPERATURE:** 232°C

**VAPOR PRESSURE:** NA = Not Applicable

**VAPOR DENSITY:** NA = Not Applicable

**BOILING POINT:** 444.6°C

**MELTING POINT:** 115.2°C

**SOLUBILITY IN WATER:** Insoluble

**DENSITY:** 1.96 at 25°C

**MOLECULAR WEIGHT:** 32.065

## 10. STABILITY AND REACTIVITY

**STABLE:** Yes

**HAZARDOUS POLYMERIZATION:** No

**HAZARDOUS DECOMPOSITION PRODUCTS:** Sulfur oxides

**INCOMPATIBLE MATERIALS:** Strong acids, Strong bases, Oxidizing materials, Halogens, Ammonia, Ammonium Nitrate.

## 11. TOXICOLOGICAL INFORMATION

### ACUTE

**DERMAL LD<sub>50</sub>:** > 2000 mg/kg

**Notes:** Rabbit

**SKIN ABSORPTION:** Not Available

**ORAL LD<sub>50</sub>:** > 5000 mg/kg

**Notes:** Rat

**INHALATION LC<sub>50</sub>:** > .047 mg/L

**Notes:** Rat

### CARCINOGENICITY

**IARC:** Not listed

**NTP:** Not listed

**OSHA:** Not listed

**REPRODUCTIVE EFFECTS:** Not Available

**TERATOGENIC EFFECTS:** Not Available

**MUTAGENICITY:** Not Available

## 12. ECOLOGICAL INFORMATION

**BIOACCUMULATION/ACCUMULATION:** Not Available

**AQUATIC TOXICITY (ACUTE)**

**96-HOUR LC<sub>50</sub>:** < 14.0 mg/L (Lepomis macrochirus)

**48-HOUR EC<sub>50</sub>:** > 5000 mg/L (Daphnia magna)

**CHEMICAL FATE INFORMATION:** Not Available

**13. DISPOSAL CONSIDERATIONS**

**DISPOSAL METHOD:** Dispose of according to applicable federal, state, provincial, and local regulations.

**PRODUCT DISPOSAL:** Contact a licensed waste disposal company.

**EMPTY CONTAINER:** Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

**14. TRANSPORT INFORMATION****DOT (DEPARTMENT OF TRANSPORTATION)**

**PROPER SHIPPING NAME:** Sulfur

**PRIMARY HAZARD CLASS/DIVISION:** 4.1

**UN/NA NUMBER:** 1350

**PACKING GROUP:** III

**U.S. SURFACE FREIGHT CLASS:** Not Regulated

**MARINE POLLUTANT #1:** Not a DOT 'Marine Pollutant' per 49CFR 171.8

**ROAD AND RAIL (ADR/RID)**

**PROPER SHIPPING NAME:** Sulfur

**UN NUMBER:** 1350

**HAZARD CLASS:** 4.1

**PACKING GROUP:** III

**AIR (ICAO/IATA)**

**SHIPPING NAME:** Sulfur

**UN/NA NUMBER:** 1350

**PRIMARY HAZARD CLASS/DIVISION:** 4.1

**PACKING GROUP:** III

**VESSEL (IMO/IMDG)**

**SHIPPING NAME:** Sulfur

**UN/NA NUMBER:** 1350

**PRIMARY HAZARD CLASS/DIVISION:** 4.1

**PACKING GROUP:** III

**EmS:** F-A, S-G

**MARINE POLLUTANT #1:** No

**CANADA TRANSPORT OF DANGEROUS GOODS**

**SHIPPING NAME:** Sulfur**UN/NA NUMBER:** 1350**PRIMARY HAZARD CLASS/DIVISION:** 4.1**PACKING GROUP:** III**15. REGULATORY INFORMATION****UNITED STATES****SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)****311/312 HAZARD CATEGORIES:** Fire hazard. Acute health hazard.**313 REPORTABLE INGREDIENTS:** None**TSCA (TOXIC SUBSTANCE CONTROL ACT)****TSCA STATUS:** All components of this product are included in inventory, exempt, or notified**REGULATIONS****STATE REGULATIONS:**

The following components appear in one or more of the following state hazardous substances lists

Component	CAS	CA	MA	MN	NJ	PA	RI
Sulfur	7704-34-9	No	No	No	Yes	Yes	Yes

**CALIFORNIA PROPOSITION 65:** This product is not known to contain any components for which the State of California has found to cause cancer, birth defects or other reproductive harm.

**CANADA****WHMIS HAZARD SYMBOL AND CLASSIFICATION**

Toxic

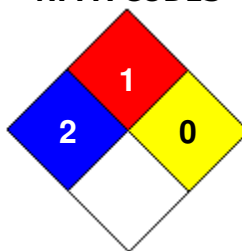
D2B

**DOMESTIC SUBSTANCE LIST (INVENTORY):** All components of this product are included in inventory, exempt, or notified

**16. OTHER INFORMATION****APPROVED BY:** EHS DEPT**PREPARED BY:** E Bolton**INFORMATION CONTACT:** msds@lesker.com

**HMIS RATING**

<b>HEALTH</b>		<b>1</b>
<b>FLAMMABILITY</b>		<b>1</b>
<b>PHYSICAL HAZARD</b>		<b>0</b>
<b>PERSONAL PROTECTION</b>		<b>F</b>

**NFPA CODES****MANUFACTURER DISCLAIMER:**

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