

# MATERIAL SAFETY DATA SHEET

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## SECTION I. MATERIAL IDENTIFICATION

MATERIAL NAME: NICKEL ETCHANT TFG  
TRADE NAME: Nickel Etchant TFG

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## SECTION II. INGREDIENTS AND HAZARDS

			TLV	PEL
Thiourea	CAS# 62-56-6	< 1%		
Sodium N-Nitro Benzene Sulfonate	CAS# 127-68-4	10-15%	5 mg/m <sup>3</sup>	5 mg/m <sup>3</sup>
Sulfuric Acid	CAS# 7664-93-9	< 10%	1 mg/m <sup>3</sup>	1 mg/m <sup>3</sup>

## SECTION III. HEALTH HAZARD DATA

### Effects of overexposure

Vapors may be irritating to skin, eyes, and mucous membranes.  
Contact with skin or eyes may cause severe irritation or burns.  
Inhalation of vapors may cause coughing, chest pains, or nose and throat irritation.

### Medical Conditions Generally Aggravated By Exposure

None identified

### Routes of entry

Inhalation, ingestion, eye contact, skin contact

## SECTION IV. EFFECTS OF OVEREXPOSURE

### Emergency and first aid procedures

CALL PHYSICIAN.

If swallowed, do NOT induce vomiting; if conscious, give water, mil, or milk of magnesia.

If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.

### Chronic effects of exposure

Thiourea is a sensitizer in persons who exhibit photosensitivity; it has produced goiter and bone marrow depression (anemia, leukopenia, thrombocytopenia and agranulocytosis). In experimental animals. Thiourea appears to be highly toxic orally, in animals, however, its toxicity in rats varies from strain to strain. Upon chronic administration Thiourea can cause hepatic tumors; It is an invitro and invivo mutagen via multiple test system. It has also been shown to cause reproductive effects in animals.

## **SECTION V. FIRE AND EXPLOSION DATA**

<b>Flash Point and Method</b>	<b>Autoignition Temp.</b>	<b>Flammability Limits in Air</b>	<b>LOWER</b>	<b>UPPER</b>
N/A	N/A	N/A	N/A	N/A

**Extinguishing media:** Use extinguishing media appropriate for surrounding fire

## **SECTION VI: SPILL AND DISPOSAL PROCEDURES**

Steps to be taken in and event of a spill or discharge.

Wear self-contained-breathing apparatus and full protective clothing. Stop leak if you can do so without risk. Ventilate area. Neutralize the spill with soda ash or lime. With clean shovel, carefully place material into clean, dry container and cover; remove from area. Flush spill area with water.

J.T. Baker Neutrasorb or Neutrasol "low Na" acid neutralizers are recommended for spills of this product.

## **SECTION VII: SPECIAL PRECAUTIONS AND COMMENTS**

SAF-T-DATA™ Storage Color Code: White

Special precautions: Keep container tightly closed. Store in corrosive-proof area

## **SECTION VIII. SPECIAL PROTECTION INFORMATION**

Respiratory protection: Wear NIOSH/MESA approved full or half face piece (with goggles) respiratory protective equipment to avoid exposure to iodine vapors above 0.1ppm. A respiratory protection program complying with requirements of 29CFR 1910.134 is recommended.

Ventilation: Where adequate ventilation is not available, use NIOSH approved vapor respirator with dust, fume and mist filters. Local ventilation through fume hoods or laminar flow stations is also preferred. Keep fumes away from strong bases.

Protective gloves: Skin contact should be minimized through use of rubber gloves.

Other protective equipment: Steel tipped shoes/eye wash station/chemical safety chemical retardant clothing. Eye protection: Safety goggles / face shield

## **SECTION IX. PHYSICAL DATA**

Boiling point 100 °C  
Vapor pressure at N/A  
Vapor density (Air = 1) N/A  
Solubility (water) complete

Specific gravity, 20/4 °C 1.04  
Evap. Rate (BuAc = 1) N/A  
Volatiles, % 90-93%  
Molecular weight N/A

**Appearance & Odor:** Clear, colorless

### **SECTION X. REACTIVITY DATA**

Stability: Stable  
Conditions to avoid: Excess heat  
Incompatible with strong bases and oxidizers, powdered metals, ammonia.  
Hazardous decomposition products: Nitrates, carbon dioxide, carbon monoxide, sulfates  
Hazardous polymerization will not occur.

### **SECTION XI. TOXICOLOGICAL INFORMATION**

Permissible exposure limit (PEL): 1 mg/m<sup>3</sup>  
Toxicity LD50 (oral rat)  
\*Carcinogenic (thiourea) NTP:yes LARC: yes Z list: No OSHA reg: No  
The International Agency for Research on Cancer has classified "strong inorganic acid mists containing Sulfuric acid" as a known human carcinogen (IARC category 1). This classification applies only to Sulfuric acid mists containing sulfuric acid and not to sulfuric acid solutions.

### **SECTION XII. ECOLOGICAL INFORMATION**

When released into the soil, this material may leach into groundwater. When released into the air, this material may be removed from the atmosphere to a moderate extent by wet deposition. When released into the air, this material may be removed from the atmosphere to a moderate extent by dry deposition.

Environmental Toxicity (sulfuric acid):  
LC50 flounder 100 to 330 mg/l/48 hour aerated water/conditions of bioassay not specified. LC50 shrimp 80 to 90 mg/l/48 hours aerated water/conditions of bioassay not specified. LC50 prawn 42.5 ppm/48 hour salt water/conditions of bioassay not specified. This material may be toxic to aquatic life.

### **SECTION XIII. DISPOSAL INFORMATION**

Disposal procedure: Dispose in accordance with all applicable federal, state, and local environmental regulations

EPA Hazardous waste number: D002 corrosive waste

**SECTION XIV: TRANSPORTATION INFORMATION**

Domestic (D.O.T.):  
Proper Shipping CORROSIVE LIQUIDS, N.O.S.  
UN/NA (SULFURIC ACID AND SULFONATE)  
Labels UN 1760  
Reportable quantity 1000 lbs

**SECTION XV. REGULATORY**

SARA Title III hazard classes:

Fire Hazard: No  
Release of Pressure: No  
Acute Health Hazard: Yes

NFPA Codes:

Health: 3  
Flammability: 0  
Reactivity: 1

**SECTION XVI. OTHER INFORMATION**

**ADDENDUM TO MATERIAL SAFETY DATA SHEET  
REGULATORY STATUS**

THIS ADDENDUM MUST NOT BE  
DETACHED FROM THE MSDS  
IDENTIFIES SARA 313 SUBSTANCE(S)

Any copying or redistribution of the MSDS  
must include a copy of this addendum  
(Chem.Key: PHACD)

**HAZARD CATEGORIES FOR  
SARA**

Section 311/312 Reporting

Acute      Chronic      Fire      Pressure      Reactive

Product or Components Of Products	RA EHS Sect. 302 lbs.)	(lbs.)	SARA Section 313 Chemicals ame List	ical Category	LA Sec. 103 RQ (lbs.)	.CRA on 261.33
Sulfuric acid (7664-93-9)	00	00	Yes	No	1000	No
thiouria (62-56-6)	0	0	Yes	no	1.0	J219

SARA Section 302 EHS RQ: Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.  
SARA Section 302 EHS TPQ: Threshold Planning Quantity of Extremely Hazardous Substance. An asterisk (\*) following a threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity + 10,000 LBS.  
SARA Section 313 Chemicals: Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.  
CERCLA Sec 103: Comprehensive Environmental Response, Compensation and Liability Act (Superfund). Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center (800-424-8802); Listed at 40 CFR 302.4  
RCRA: Resource Conservation and Reclamation Act. Commercial chemical product wastes designated as acute hazards and toxic under 40 CFR 261.33

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Information published in this Material Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the user's suitability of this information for the adoption of necessary safety precautions. We reserve the right to revise Material Safety Data Sheets periodically as new information becomes available.