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MSDS Number: **H3633** \* \* \* \* \* *Effective Date: 11/10/05* \* \* \* \* \* *Supersedes: 02/18/03*

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# HYDRAZINE SULFATE

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## 1. Product Identification

**Synonyms:** Hydrazinium sulfate; Hydrazine monosulfate

**CAS No.:** 10034-93-2

**Molecular Weight:** 130.12

**Chemical Formula:** (NH<sub>2</sub>)<sub>2</sub> . H<sub>2</sub>SO<sub>4</sub>

**Product Codes:**

J.T. Baker: 2177

Mallinckrodt: 5220

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## 2. Composition/Information on Ingredients

Ingredient	CAS No	Percent
Hazardous		
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Hydrazine, Sulfate (1:1)	10034-93-2	99 - 100%
Yes		

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## 3. Hazards Identification

### Emergency Overview

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**WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES SEVERE IRRITATION TO EYES, SKIN AND RESPIRATORY TRACT. MAY CAUSE KIDNEY, LIVER AND BLOOD DISORDERS. POSSIBLE CANCER HAZARD. MAY CAUSE CANCER BASED ON ANIMAL DATA. Risk of cancer depends on duration and level of exposure. MAY CAUSE ALLERGIC SKIN REACTION.**

**J.T. Baker SAF-T-DATA<sup>(tm)</sup>** Ratings (Provided here for your convenience)

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Health Rating: 3 - Severe (Cancer Causing)

Flammability Rating: 1 - Slight

Reactivity Rating: 2 - Moderate

Contact Rating: 3 - Severe (Corrosive)

Lab Protective Equip: GOGGLES; LAB COAT; VENT HOOD; PROPER GLOVES; CLASS A EXTINGUISHER

Storage Color Code: Blue (Health)

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### Potential Health Effects

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**Inhalation:**

Causes severe respiratory tract irritation. Symptoms may include coughing, shortness of breath, dizziness, nausea and vomiting. Higher concentrations can cause trembling, convulsions.

**Ingestion:**

Toxic by ingestion. Results in abdominal pain, headache, convulsions.

**Skin Contact:**

Causes irritation. May cause burns to the skin tissue. May be a route of absorption into the body with symptoms paralleling ingestion. May cause skin allergy in some individuals.

**Eye Contact:**

Causes irritation. May be extremely irritating with possible burns to eye tissue and permanent eye damage may result.

**Chronic Exposure:**

Chronic exposure may affect the skin, liver, kidneys, blood.

**Aggravation of Pre-existing Conditions:**

Persons with pre-existing skin disorders or eye problems, or impaired liver, kidney, blood, or respiratory function may be more susceptible to the effects of the substance.

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## 4. First Aid Measures

**Inhalation:**

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.

**Skin Contact:**

Immediately flush skin with plenty of soap and water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

**Eye Contact:**

Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

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## 5. Fire Fighting Measures

**Fire:**

Fire is possible at elevated temperatures or by contact with an ignition source.

**Explosion:**

Hydrazine vapor is a severe explosion hazard with oxidizers or on heating.

**Fire Extinguishing Media:**

Water spray, dry chemical, alcohol foam, or carbon dioxide. Water spray may be used to keep fire exposed containers cool.

**Special Information:**

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full

facepiece operated in the pressure demand or other positive pressure mode.

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## 6. Accidental Release Measures

Ventilate area of leak or spill. Keep unnecessary and unprotected people away from area of spill. Wear appropriate personal protective equipment as specified in Section 8. Spills: Pick up and place in a suitable container for reclamation or disposal, using a method that does not generate dust.

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## 7. Handling and Storage

Keep in a tightly closed container. Store in a cool, dry, ventilated area away from sources of heat or ignition. Protect against physical damage. Store separately from reactive or combustible materials, and out of direct sunlight. Wear special protective equipment (Sec. 8) for maintenance break-in or where exposures may exceed established exposure levels. Wash hands, face, forearms and neck when exiting restricted areas. Shower, dispose of outer clothing, change to clean garments at the end of the day. Avoid cross-contamination of street clothes. Wash hands before eating and do not eat, drink, or smoke in workplace. Containers of this material may be hazardous when empty since they retain product residues (dust, solids); observe all warnings and precautions listed for the product.

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## 8. Exposure Controls/Personal Protection

### **Airborne Exposure Limits:**

- For Hydrazine (CAS 302-01-2) -

OSHA (PEL): 1 ppm (TWA), skin.

ACGIH (TLV): 0.01 ppm (TWA), skin, A3 - animal carcinogen.

NIOSH (REL): 0.03 ppm (2-hour), ceiling, potential occupational carcinogen.

### **Ventilation System:**

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.

### **Personal Respirators (NIOSH Approved):**

For Hydrazine (CAS 302-01-2): If the exposure limit is exceeded and engineering controls are not feasible, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus. Breathing air quality must meet the requirements of the OSHA respiratory protection standard (29CFR1910.134). This substance has poor warning properties.

### **Skin Protection:**

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

### **Eye Protection:**

Use chemical safety goggles and/or full face shield where dusting or splashing of solutions is possible. Maintain eye wash fountain and quick-drench facilities in work area.

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## 9. Physical and Chemical Properties

**Appearance:**

White, free-flowing crystalline powder.

**Odor:**

Odorless.

**Solubility:**

3g/100g cold water.

**Specific Gravity:**

1.37

**pH:**

1.3 (0.2 M solution)

**% Volatiles by volume @ 21C (70F):**

0

**Boiling Point:**

No information found.

**Melting Point:**

254C (489F)

**Vapor Density (Air=1):**

No information found.

**Vapor Pressure (mm Hg):**

No information found.

**Evaporation Rate (BuAc=1):**

No information found.

## 10. Stability and Reactivity

**Stability:**

Stable under ordinary conditions of use and storage. A strong reducing agent.

**Hazardous Decomposition Products:**

Burning may produce sulfur oxides and nitrogen oxides.

**Hazardous Polymerization:**

Will not occur.

**Incompatibilities:**

Strong oxidizers. Metals, metal oxides, acids.

**Conditions to Avoid:**

Heat, incompatibles.

## 11. Toxicological Information

Oral rat LD50: 601 mg/kg; Irritation data: eye rabbit, standard Draize: 20 mg/24H moderate. Investigated as a tumorigen and mutagen.

-----\Cancer Lists\-----			
Ingredient	---NTP Carcinogen---		IARC Category
	Known	Anticipated	
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Hydrazine, Sulfate (1:1)	No	Yes	None

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## 12. Ecological Information

**Environmental Fate:**

No information found.

**Environmental Toxicity:**

No information found.

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## 13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Although not a listed RCRA hazardous waste, this material may exhibit one or more characteristics of a hazardous waste and require appropriate analysis to determine specific disposal requirements. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

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## 14. Transport Information

**Domestic (Land, D.O.T.)**

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**Proper Shipping Name:** CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (HYDRAZINE SULFATE)**Hazard Class:** 8**UN/NA:** UN3260**Packing Group:** III**Information reported for product/size:** 200LB**International (Water, I.M.O.)**

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**Proper Shipping Name:** CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (HYDRAZINE SULFATE)**Hazard Class:** 8**UN/NA:** UN3260**Packing Group:** III**Information reported for product/size:** 200LB**International (Air, I.C.A.O.)**

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**Proper Shipping Name:** CORROSIVE SOLID, ACIDIC, INORGANIC, N.O.S. (HYDRAZINE SULFATE)**Hazard Class:** 8**UN/NA:** UN3260**Packing Group:** III**Information reported for product/size:** 200LB

# 15. Regulatory Information

-----\Chemical Inventory Status - Part 1\-----				
Ingredient	TSCA	EC	Japan	Australia
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Hydrazine, Sulfate (1:1) (10034-93-2)	Yes	Yes	Yes	

Yes

-----\Chemical Inventory Status - Part 2\-----				
		--Canada--		
Ingredient	Korea	DSL	NDSL	Phil.
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Hydrazine, Sulfate (1:1) (10034-93-2)	Yes	Yes	No	

Yes

-----\Federal, State & International Regulations - Part 1\-----				
Ingredient	-SARA 302-		-----SARA 313-----	
	RQ	TPQ	List	Chemical Catg.
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Hydrazine, Sulfate (1:1) (10034-93-2)	No	No	Yes	No

-----\Federal, State & International Regulations - Part 2\-----			
		-RCRA-	-TSCA-
Ingredient	CERCLA	261.33	8(d)
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Hydrazine, Sulfate (1:1) (10034-93-2)	No	No	No

Chemical Weapons Convention: No      TSCA 12(b): No      CDTA: No  
SARA 311/312: Acute: Yes      Chronic: Yes      Fire: No      Pressure: No  
Reactivity: No      (Pure / Solid)

**WARNING:**  
THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

**Australian Hazchem Code:** 2X  
**Poison Schedule:** None allocated.  
**WHMIS:**  
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

# 16. Other Information

**NFPA Ratings:** Health: 3 Flammability: 1 Reactivity: 0  
**Label Hazard Warning:**  
WARNING! HARMFUL IF SWALLOWED, INHALED OR ABSORBED THROUGH SKIN. CAUSES SEVERE IRRITATION TO EYES, SKIN AND RESPIRATORY TRACT. MAY CAUSE KIDNEY, LIVER AND BLOOD DISORDERS. POSSIBLE CANCER HAZARD. MAY CAUSE CANCER BASED ON ANIMAL DATA. Risk of cancer depends on duration and level of exposure. MAY CAUSE ALLERGIC SKIN REACTION.  
**Label Precautions:**  
Do not get in eyes, on skin, or on clothing.

Do not breathe dust.

Keep container closed.

Use only with adequate ventilation.

Wash thoroughly after handling.

**Label First Aid:**

If swallowed, DO NOT INDUCE VOMITING. Give large quantities of water. Never give anything by mouth to an unconscious person. 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. Remove contaminated clothing and shoes. Wash clothing before reuse. In all cases, get medical attention.

**Product Use:**

Laboratory Reagent.

**Revision Information:**

No Changes.

**Disclaimer:**

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