

**MATERIAL SAFETY DATA SHEET  
FOR  
THORN SMITH LABORATORIES  
ANALYZED QUANTITATIVE UNKNOWN**

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Nickel Oxide for Ni  
Catalog Number 80-1395

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Manufacturer: Auric Enterprises, Inc.  
d/b/a Thorn Smith Laboratories  
Address: 7755 Narrow Gauge Road  
Beulah, MI 49617  
Phone Number: 231-882-4672  
MSDS Number: TSL-010  
Date Prepared: October 9, 1989  
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**SECTION 1 - MATERIAL IDENTIFICATION AND INFORMATION**

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COMPONENTS - Chemical Name & Common Names  
(Hazardous Components 1% or greater; Carcinogens 0.1% or greater)

Nickel Oxide

Formula: NiO  
CAS No.: 1314-06-3  
OSHA PEL: 1 mg (Ni) /m<sup>3</sup> (total dust)  
ACGIH TLV: 1(Ni) mg/m<sup>3</sup>  
OTHER LIMITS: N/A

Sodium Chloride

Formula: NaCl  
CAS No.: 7647-14-5  
OSHA PEL: According to our sources, exposure threshold levels have not been established.  
(N/E)  
ACGIH TLV: N/E  
OTHER LIMITS: N/A

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**SECTION 2 - PHYSICAL/CHEMICAL CHARACTERISTICS**

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Boiling Point: 1413° C (2575° F)  
Specific Gravity (H<sub>2</sub>O=1): 4.84 (NiO); 2.16 (NaCl)  
Vapor Pressure (mm Hg and Temperature): <1 (NaCl)  
Melting Point: 801° C (1474° F) (NaCl)  
Vapor Density (Air-1): N/A  
Evaporation Rate (-1): N/A  
Solubility in Water: Negligible (less than 0.1%) (NiO); Appreciable (more than 10%) (NaCl)

Water Reactive: No

Appearance and Odor: Gray-black powder (NiO); white crystalline solid (NaCl). Odorless.

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### SECTION 3 - FIRE AND EXPLOSION HAZARD DATA

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Flash Point and Method Used: N/A

Auto-Ignition Temperature: N/A

Flammability Limits in Air (% by volume): N/A

LEL: N/A UEL: N/A

Extinguisher Media: Use extinguishing media appropriate for surrounding fire.

Special Fire Fighting Procedures: Firefighters should wear proper protective equipment and self-contained breathing apparatus with full facepiece operated in positive pressure mode.

Unusual Fire and Explosion Hazards: Toxic gases produced: hydrogen chloride.

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### SECTION 4 - REACTIVITY HAZARD DATA

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STABILITY:  Stable  Unstable

Conditions to Avoid: Heat. Stable under ordinary conditions of use and storage.

Incompatibility (Materials to Avoid): Strong oxidizing agents, lithium, inter-halogens, iron, cement.

Hazardous Decomposition Products: Hydrogen chloride.

HAZARDOUS POLYMERIZATION:  May Occur  Will Not Occur

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### SECTION 5 - HEALTH HAZARD DATA

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PRIMARY ROUTES OF ENTRY:

Inhalation  Ingestion  Skin Contact  Eye Contact  Not Hazardous

CARCINOGEN LISTED IN:

NTP  OSHA  IARC Monograph  Not Listed

TOXICITY: Nickel Oxide: LD50 (scu-mouse) 50 mg/kg.

Sodium Chloride: LD50 (oral-rat) 3000 mg/kg; LD50 (ipr-mouse) 2602 mg/kg;

LD50 (scu-mouse) 3150 mg/kg; LD50 (iv-mouse) 645 mg/kg.

HEALTH HAZARDS - Acute:

Inhalation: May cause headache, coughing, dizziness, difficult breathing, and irritation to upper respiratory tract.

Ingestion: May cause nausea, vomiting and gastrointestinal irritation.

Skin Contact: May cause irritation or burns.

Eye Contact: May cause irritation or burns.

HEALTH HAZARDS - Chronic: Chronic effects of overexposure from inhaling dusts and mists of nickel compounds can include lung irritation, coughing, wheezing, and difficult breathing. The inhalation of dusts and mists of nickel compounds has been associated with an increased risk of lung and nasal cancer. Chronic effects of overexposure to sodium chloride may be elevated blood pressure and accelerated respiration rate.

Signs and Symptoms of Exposure: No information found.

Medical Conditions Generally Aggravated by Exposure: High blood pressure.

EMERGENCY FIRST AID PROCEDURES - Seek medical assistance for further treatment, observation, and support if necessary.

Inhalation: If a person breathes in large amounts, move the exposed person to fresh air. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

Ingestion: If swallowed, and the person is conscious, immediately induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Contact: Remove any contaminated clothing. Wipe off excess from skin. Immediately wash skin with soap and water for at least 15 minutes. Get medical attention if irritation develops or persists.

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

### SARA/TITLE III HAZARD CATEGORIES AND LISTS

Acute: Yes    Chronic: Yes    Flammability: No    Pressure: No    Reactivity: No  
Extremely Hazardous Substance: No  
CERCLA Hazardous Substance: No  
SARA 313 Toxic Chemicals: No  
TSCA Inventory: No

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### SECTION 6 - CONTROL AND PROTECTIVE MEASURES

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Respiratory Protection (Specify Type): None required where adequate ventilation conditions exist. If airborne concentration is high, a NIOSH approved dist/mist respirator is recommended. If concentration exceeds capacity of respirator, a NIOSH approved self-contained breathing apparatus is advised.

Protective Gloves: Wear protective gloves.

Eye Protection: Wear chemical safety goggles. Contact lenses should not be worn when working with this material. Maintain eye wash fountain and quick-drench facilities in work area.

VENTILATION TO BE USED: A local exhaust system which captures the contaminant at its source is recommended to prevent dispersion of the contaminant in the workroom air.

Local Exhaust     Mechanical (General)     Special

Other(Specify)

Other Protective Clothing and Equipment: Wear clean body-covering clothing.

Hygienic Work Practices: Avoid contact with eyes, skin, and clothing. Avoid breathing dust. Keep container closed when not in use. Use with adequate ventilation. Wash thoroughly after handling.

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### SECTION 7 - PRECAUTIONS FOR SAFE HANDLING & LEAK/USE PROCEDURES

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Steps to be taken if material is spilled or released: Wear self-contained breathing apparatus and full protective clothing. With clean shovel, carefully place material into clean, dry container and cover; remove from area. Flush spill area with water.

Waste Disposal Methods: Dispose in accordance with all applicable local, state, federal environmental regulations.

Precautions to be taken in handling and storage: Keep in a tightly closed container, store in a secure poison

area. Protect against physical damage. Store in accordance with all applicable local, state, and federal environmental regulations.

Other precautions and/or special hazards:

NFPA Rating: Health: **2** Flammability: **0** Reactivity: **0**.

HMIS Rating: No information available.

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## SECTION 8 - TRANSPORTATION DATA AND ADDITIONAL INFORMATION

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### Domestic (D.O.T.)

Proper Shipping Name: Chemical, n.o.s. (Non-regulated)

### International (T.M.O.)

Proper Shipping Name: Chemical, n.o.s. (Non-regulated)

### AIR (I.C.A.O.)

Proper Shipping Name: Chemical, n.o.s. (Non-regulated)

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