

## Material Safety Data Sheet

Identity: Nickel oxide

Formula: NiO

### SECTION I - GENERAL INFORMATION

Manufacturer: [Stanford Advanced Materials](#) (SAM)

The information below is believed to be accurate and represents the best information available to SAM. However, SAM makes no warranty, expressed or implied with respect to such information and assumes no liability resulting from its use.

### SECTION II - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

Molecular weight: 74.71

CAS #	OSHA PEL	ACGIH TLV	Other	%
1313-99-1	1mg(Ni)/m <sup>3</sup>	1mg(Ni)/m <sup>3</sup>		0-100%

### SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Physical States: Solid

Boiling Point: N/A

Vapor Pressure (vs. air or mmHg): N/A

Melting Point: 1984.00 °C

Vapor Density(vs. air=1):

Evaporation Rate: N/A

Flash Point N/A

Solubility in water: Insoluble

Specific Gravity: 6.7gm/cc

*Appearance and odor:* Green-black pieces and powder, no odor, turns yellow when hot

### SECTION IV - FIRE AND EXPLOSION HAZARD DATA

*Method Used:* Non-flammable*Explosive Limits:* LEL: N/A

UEL: N/A

*Extinguishing Media:*

Use suitable extinguishing media for surrounding materials and type of fire.

*Special Fire Fighting Procedures:* Firefighters must wear full face, self-contained breathing apparatus with full protective clothing to prevent contact with skin and eyes. Fumes from fire are hazardous. Isolate runoff to prevent environmental pollution.

*Unusual Fire and Explosion Hazards:*

Nickel oxide may emit toxic fumes if involved in a fire. May react violently with fluorine; hydrogen peroxide, hydrogen sulfide; iodine, barium peroxide +air.

SECTION V - REACTIVITY DATA

*Stability:* Stable

*Conditions to Avoid (stability):* None

*Incompatibility:* fluorine; hydrogen peroxide; hydrogen sulfide; barium peroxide +air

*Hazardous Decomposition or Byproducts:* Nickel and its oxides

*Hazardous Polymerization:* Will not occur

*Conditions to avoid (hazardous polymerization):* None

SECTION VI - HEALTH HAZARD DATA

*Routes of entry:* Inhalation? Yes      Skin? Yes      Eyes? Yes      Ingestion? Yes      Other? No

*Health Hazards (Acute and Chronic):*

*Inhalation:* May cause a red, dry sore nose and throat, coughing and shortness of breath.

*Ingestion:* May cause gastritis, convulsions, asphyxia, nausea, diarrhea, paralysis

*Skin:* May cause redness, itching, swelling, burning, and ulcers.

*Eye:* May cause redness, itching, watering, swelling and burning.

*Inhalation:*

*Acute:* May cause irritation to the upper respiratory tract, mucous membranes and nasal cavities.  
May cause pulmonary asthma attacks

*Chronic:* Prolonged or repeated inhalation may cause pneumonitis

*Ingestion:*

*Acute:* Nickel is poison by ingestion.

*Chronic:* Large doses may cause intestinal disorders, convulsions, and asphyxia

*Skin:*

*Acute:* May cause irritation.

*Chronic:* May sensitize the skin. May cause allergic dermatitis, eczematous dermatitis and may be accompanied a week later with superficial skin ulcers, with may discharge or become crushed.

*Eye:*

*Acute:* May cause irritation.

*Chronic:* May cause conjunctivitis

*Target Organ :* May affect nasal cavities, respiratory system, lungs, blood and skin

*Carcinogenicity:* NTP? Yes      IARC Monographs? Yes      OSHA Regulated? Yes

*Medical Conditions Aggravated by Exposure:* Pre-existing respiratory disorders.

*Emergency and First Aid Procedures:*

- Inhalation:* Remove victim to fresh air, keep warm and quiet, and give oxygen if breathing is difficult; seek medical attention
- Ingestion:* Give 1-2 glasses of milk or water and induce vomiting, seek medical attention. Never induce vomiting or give anything by mouth to an unconscious person.
- Skin:* Remove contaminated clothing, brush material off skin, wash affected area with mild soap and water, and seek medical attention if symptoms persist..
- Eye:* Flush eyes with lukewarm water, lifting upper and lower eyelids for at least 15 minutes and seek medical attention

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

*Steps to be taken in case material is released or spilled:*

Wear appropriate respiratory and protective equipment specified in section VIII-Control Measures. Isolate spill area, provide ventilation. Vacuum up spill using a high efficiency particulate absolute (HEPA) air filter and place in a closed container for proper disposal. Take care not to raise dust.

*Waste disposal method:*

Dispose of in accordance with state, local, and federal regulations.

*Hazard Label Information:*

Store in cool, dry area and in tightly sealed container. Wash thoroughly after handling.

SECTION VIII - CONTROL MEASURES

*Protective Equipment Summary (Hazard Label Information):*

NIOSH approved respirator, impervious gloves, safety glasses, clothes to prevent contact.

*Ventilation:*

Local Exhaust: To maintain concentration at low exposure levels.  
Mechanical (General): Recommended.

*Work/Hygienic/Maintenance Practices:*

Implement engineering and work practice controls to reduce and maintain concentration of exposure at low levels. Use good housekeeping and sanitation practices. Do not use tobacco or food in work area. Wash thoroughly before eating or smoking. Do not blow dust off clothing or skin with compressed air.

Please be advised that N/A can either mean Not Applicable or No Data Has Been Established