

PRAXAIR SURFACE TECHNOLOGIES INC -- NI-449 PRODUCT CODE: ZNI449-0010 --  
3439-01-426-5267

===== Product Identification =====

Product ID:NI-449 PRODUCT CODE: ZNI449-0010  
MSDS Date:09/10/1993  
FSC:3439  
NIIN:01-426-5267  
Status Code:A  
MSDS Number: CJWRX  
=== Responsible Party ===  
Company Name:PRAXAIR SURFACE TECHNOLOGIES INC  
Address:1555 MAIN STREET  
City:INDIANAPOLIS  
State:IN  
ZIP:46224-3283  
Country:US  
In  
fo Phone Num:317-240-2650  
Emergency Phone Num:(800)424-9300  
Preparer's Name:MICHELLE ALEXANDER  
Chemtrec Ind/Phone:(800)424-9300  
CAGE:0FGH2

=== Contractor Identification ===  
Company Name:PRAXAIR SURFACE TECHNOLOGIES INC  
Address:1555 MAIN STREET  
Box:City:INDIANAPOLIS  
State:IN  
ZIP:46224-3283  
Country:US  
Phone:317-240-2650  
CAGE:0FGH2  
Company Name:STARGHILL TECHNOLOGIES CORP  
Address:3850 OAKMAN BLVD  
Box:City:DETROIT  
State:MI  
ZIP:48204-1119  
Country:US  
Phone:313-933-4141  
Contract Num:SP0450-95-D-4037  
CA

GE:0VYG8

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Composition/Information on Ingredients  
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Ingred Name:CHROMIUM  
CAS:7440-47-3  
RTECS #:GB4200000  
Minumum % Wt:5.  
Maxumum % Wt:20.  
OSHA PEL:1 MG/M3  
ACGIH TLV:0.5 MG/M3  
EPA Rpt Qty:1 LB  
DOT Rpt Qty:1 LB

Ingred Name:NICKEL  
CAS:7440-02-0  
RTECS #:QR5950000  
Minumum % Wt:50.  
Maxumum % Wt:75.  
OSHA PEL:1 MG/M3  
ACGIH TLV:1 MG/M3

Ingred Name:COBALT  
CAS:7440-48-4  
RTECS #:GF8750000  
Minumum % Wt:20.  
Maxumum % Wt:50.  
OSHA PEL:0.1 MG/M3  
ACGIH TLV:0.02 MG/M3

Ingred Name:SIL  
ICON  
CAS:7440-21-3  
RTECS #:VW0400000  
Minumum % Wt:1.  
Maxumum % Wt:5.  
OSHA PEL:15 MG/M3  
ACGIH TLV:10 MG/M3

Ingred Name:BORON  
CAS:7440-42-8  
RTECS #:ED7350000  
Minumum % Wt:1.  
Maxumum % Wt:5.

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Hazards Identification  
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LD50 LC50 Mixture:NONE SPECIFIED BY MANUFACTURER.  
Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES  
Reports of Carcinogenicity:NTP:YES IARC:YES OSHA:YES  
Health Hazards Acute and Chronic:SKIN:MAY CAUSE ALLERGIC DERMATITIS,  
WI

TH REDNESS & PAPULAR FORMATION IN SUSCEPTABLE INDIVIDUALS. MAY CAUSE ULCERS PROGRESSING TO DRY & SCALY SKIN, FEVER. EYE:MAY CAUSE IRRITATION, EXPERIENCED AS REDNESS & EXCESS REDNESS OF THE CONJUNCTIVA. SWALLOWING: MAY CAUSE NAUSEA, ABDOMINAL PAIN, VOMITING, DIARRHEA, CENTRAL NERVOUS SYSTEM DEPRESSION, & BURNING SENSATION. INHALATION:MAY CAUSE RESPIRATORY TRACT IRRITATION, WITH CHEST PAIN, VOMITING, DIARRHEA, BURNING SENSATION, & CENTRAL NERVOUS SYSTEM DEPRESSION. M

MAY ALSO CAUSE INTERSTITIAL PNEUMONITIS &

SENSITIZATION OF THE RESPIRATORY TRACT IN SUSCEPTIBLE PERSONS.

Explanation of Carcinogenicity:NICKEL AND CHROMIUM HAVE BEEN DETERMINED TO CAUSE CANCER IN EXPERIMENTAL ANIMALS(IARC, NTP). NICKEL IS LISTED AS A PROBABLE HUMAN CARCINOGEN. CHROMIUM IS LISTED AS A HUMAN CARCINOGEN. CHRONIC ECZEMA/NEURODERMATITIS FROM NICKEL DOES NOT REQUIRE CONTINUOUS METAL CONTACT.

Effects of Overexposure:MAY CAUSE SENSITIZATION IN SUSCEPTABLE INDIVIDUALS.

CHRONIC EXPOSURE TO THE EYE CAN CAUSE CORNEAL DAMAGE, POLYCYTHEMIA, HYPERPLASIA OF THE THYROID GLAND AND DAMAGE TO THE ALPHA CELLS OF THE PANCREAS. REPEATED INHALATION MAY CAUSE EMPHYSEMA OR PULMONARY FIBROTIC DISEASE. CHRONIC SKIN CONTACT MAY SPREAD TO THE WHOLE BODY WITH LESIONS, ITCHING, SORENESS, BURNING SENSATION AND REDNESS.

Medical Condition Aggravated by Exposure:BREATHING OF DUST MAY AGGRAVATE ASTHMA AND INFLAMMATORY OR FIBROTIC PULMONARY DISEASE. MAY ALSO

AGGRAVATE AN EXISTING DERMATITIS.

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===== First Aid Measures =====

First Aid:SWALLOWING:GIVE AT LEAST 2 GLASSES OF MILK OR WATER. INDUCE VOMITING, UNLESS PATIENT IS UNCONSCIOUS. CALL A PHYSICIAN. SKIN:WASH THOROUGHLY WITH SOAP & WATER. INHALATION: REMOVE TO FRESH AIR. GIVE ARTIFICIAL RESPIRATION IF NOT BREATHING. OXYGEN MAY BE GIVEN IF NECESSARY. CALL A PHYSICIAN. EYES: FLUSH THOROUGHLY WITH PLENTY OF WATER. IF DISCOMFORT PERSISTS, SEEK MEDICAL

ATTENTION.PREFERABLY AN OPHTHALMOLOGIST. NOTES TO PHYSICIAN:THE HAZARDS OF THIS MATERIAL ARE MAINLY DUE TO ITS SENSITIZING AND MILD IRRITATING PROPERTIES. THERE IS NO SPECIFIC ANTIDOTE.

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===== Fire Fighting Measures =====

Flash Point:NONE

Upper Limits:0.00%

Extinguishing Media:USE SPECIAL DRY POWDER METAL EXTINGUISHING MATERIAL TO EXTINGUISH METAL FIRES. USE APPROPRIATE EXTINGUISHER FOR COMBUSTIBLE MATERIALS THAT MAY BE IGNITED BY THE T

HERMAL SPRAY

FLAME.

Fire Fighting Procedures:NONE SPECIFIED BY MANUFACTURER.

Unusual Fire/Explosion Hazard:NONE SPECIFIED BY MANUFACTURER.

===== Accidental Release Measures =====

Spill Release Procedures:WEAR PROTECTIVE EQUIPMENT TO PROTECT AGAINST HAZARDS AND DISPOSE OF PER WASTE DISPOSAL METHOD.

Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

===== Handling and Storage =====

Handling and Storage Precautions:NONE SPECIFIED BY MANUFACTURER.

Other Precautions:CAUTION: WHEN THERMAL SPRAYING - ELECTRICITY CAN CAUSE FATAL SHOCK! DO NOT TOUCH LIVE ELECTRICAL PARTS! ARC RAYS CAN BURN EYES AND SKIN! WEAR RECOMMENDED EYE AND BODY PROTECTION. FUMES, GAS, AND DUST CAN HARM YOUR HEALTH.PROVIDE ENOUGH VENTILATION AND WEAR RESPIRATOR IF REQUIRED.

===== Exposure Controls/Personal Protection =====

Respiratory Protection:DEPENDS UPON SPECIFIC USE, CONDITION, AND LOCATION. IF THERE IS

DUSTINESS, WEAR RESPIRATOR SELECTED PER

OSHA 1910.134, AND OSHA 29 CFR 1910.252 AND ANSI Z49.1.

Ventilation:LOCAL DUST PICK UP AND VENTILATION RECOMMENDED.

Protective Gloves:NOT REQUIRED.

Eye Protection:WHEN DUSTY USE GOGGLES PER OSHA 1910.13

Other Protective Equipment:SEE ANSI Z49.1, ANSI Z87.1, ANSI Z88.2 FOR HELMETS, FACE SHIELDS AND GOGGLES.

Work Hygienic Practices:NONE SPECIFIED BY MANUFACTURER.

Supplemental Safety and Health

NONE SPECIFIED BY MANUFACTURER.

===== Physical/Chemical Properties =====

HCC:N1

Boiling Pt:B.P. Text:NONE

Vapor Density:N/VOLATILE

Evaporation Rate & Reference:UNAVAILABLE

Appearance and Odor:DUSTY DARK GRAY POWDER

Percent Volatiles by Volume:0

===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

NONE KNOWN.

Stability Condition to Avoid:NONE KNOWN.

Hazardous Decomposition Products:WHEN THERMAL SPRAYING, WILL VARY WITH OPERATING CONDITIONS. REASONABLY EX

PECTED DECOMPOSITION PRODUCTS OF  
NORMAL OPERATION FROM THIS THERMAL SPRAY POWDER INCLUDE OXIDES OF  
THE LISTED INGREDIENTS.

===== Toxicological Information =====

Toxicological Information:NONE SPECIFIED BY MANUFACTURER.

===== Ecological Information =====

Ecological:NONE SPECIFIED BY MANUFACTURER.

===== Disposal Considerations =====

Waste Disposal Methods:DISPOSE OF WASTE PER LOCAL, STATE,  
AND FEDERAL  
REGULATIONS.

===== MSDS Transport Information =====

Transport Information:NONE SPECIFIED BY MANUFACTURER.

===== Regulatory Information =====

SARA Title III Information:PRODUCT CONTAINS THE FOLLOWING TOXIC  
CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF  
THE EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW ACT OF 1986 AND  
OF 40 CFR 372: CHROMIUM, CAS# 7440-47-3,