

PRAXAIR SURFACE TECHNOLOGIES INC -- NI-414 PRODUCT CODE: ZNI414-0010 --
3439-01-426-5254

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

Product ID:NI-414 PRODUCT CODE: ZNI414-0010

MSDS Date:09/14/1993

FSC:3439

NIIN:01-426-5254

Status Code:A

MSDS Number: CJWQV

=== 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

===== Composition/Information on Ingredients =====

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:5.
Maxumum % Wt:20.
OSHA PEL:0.1 MG/M3
ACGIH TLV:0.02 MG/M3

Ingred Name:TUNG
STEN
CAS:7440-33-7
RTECS #:YO7175000
Minumum % Wt:5.
Maxumum % Wt:20.
ACGIH TLV:5 MG/M3
ACGIH STEL:10 MG/M3

Ingred Name:ALUMINUM
CAS:7429-90-5
RTECS #:BD0330000
Minumum % Wt:5.
Maxumum % Wt:20.
OSHA PEL:15 MG/M3
ACGIH TLV:10 MG/M3

Ingred Name:TANTALUM
CAS:7440-25-7
RTECS #:WW5505000
Minumum % Wt:1.
Maxumum % Wt:5.
OSHA PEL:5 MG/M3
ACGIH TLV:5 MG/M3

Ingred Name:HAFNIUM
CAS:7440-58-6
RTECS #:MG4600000
Minumum % Wt:1.

Hazards Identification =====

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,
WITH 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
CONJUNCTIV
A. 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. 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
TAL 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.

===== 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 COMBUSTABLE MATERIALS THAT MAY BE IGNITED BY THE THERMAL 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:WHE

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

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

Toxicologica

I 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 =====
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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,