

PRAXAIR SURFACE TECHNOLOGIES INC -- NI-533 PRODUCT CODE: ZNI533-0010 --  
3439-01-426-5420

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

Product ID:NI-533 PRODUCT CODE: ZNI533-0010  
MSDS Date:09/02/1993  
FSC:3439  
NIIN:01-426-5420  
Status Code:A  
MSDS Number: CJWTM  
=== 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 ALEXANCER  
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: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:MOLYB  
DENUM  
CAS:7439-98-7  
RTECS #:QA4680000  
Minumum % Wt:1.  
Maxumum % Wt:5.  
ACGIH TLV:10 MG/M3

Ingred Name:COLUMBIUM/NIOBIUM  
CAS:7440-03-1  
RTECS #:QT9900000  
Minumum % Wt:1.  
Maxumum % Wt:5.

Ingred Name:TITANIUM  
CAS:7440-32-6  
RTECS #:XR1700000  
Minumum % Wt:1.  
Maxumum % Wt:5.

=====  
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 OSH

A: 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 CONJUNCTIVA. SWALLOWING: MAY CAUSE NAUSEA, ABDOMINAL PAIN, VOMITING, DIARRHEA, CENTRAL NERVOUS SYSTEM DEPRESSION, & BURNING SENSATION. INHALATION: MAY CAUSE RESPIRATORY TRACT IRRITATION, WITH CHEST PAIN, V

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 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.

=====  
===== 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.

===== Hand  
ling 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 RESPRI-RATOR 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.

S  
upplemental 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 P

roducts: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 =====

Toxicological Information:NONE SPECIFIED BY MANUFACTURER.

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

Ecological:NONE SPECIFIED BY MANUFACTURER.

===== Disposal Considerati  
ons =====

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,