

PRAXAIR SURFACE TECHNOLOGIES INC -- NI-332 (PRODUCT CODE 036081-05) --  
3439-01-426-5219

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

Product ID:NI-332 (PRODUCT CODE 036081-05)  
MSDS Date:04/01/1993  
FSC:3439  
NIIN:01-426-5219  
Status Code:A  
MSDS Number: CJSGB  
=== 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:317-240-2209  
Preparer's Name:DELMAR BEIGHT  
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:SP0490-95-D-4037  
CAGE:0VY

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

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: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: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:ALUMINIUM  
CAS:7429-90-5  
RTECS #:BD0330000  
Minumum % Wt:1.  
Maxumum % Wt:5.  
OSHA PEL:15 MG/M3  
ACGIH TLV:10 MG/M3

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

Ingred Name:TUNGSTEN  
CAS:7440-33-7  
RTECS #:YO7175000  
Minumum % Wt:1.  
Maxumum % Wt:5.  
ACGIH TLV:5 MG/M3  
ACGIH STEL:10 MG/M3

Ingred Name:MOLYBDENUM  
CAS:7439-98-7  
RTECS #:QA4680000  
Minumum % Wt:1.  
Maxumum % Wt:5.  
ACGIH TLV:10 MG/M3

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

===== Hazards Identification =====

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES  
Reports of Carcinogenicity:NTP:YES IARC:YES OSHA:YES  
Health Hazards Acute and Chronic:ACUTE- SKIN: MAY CAUSE ALLERGIC  
DERMATITIS IN SUSCEPTABLE INDIVIDUALS, WHICH USUALLY OCCURS IN THE  
FOLDS OF THE SKIN. EYES: MAY CAUSE IRRITATION. INGESTION: MA

Y

CAUSE NERVOUS SYSTEM DEPRESSION. INH ALATION: MAY CAUSE  
RESPIRATORY TRACT IRRITATION & CENTRAL NERVOUS SYSTEM DEPRESSION.  
MAY ALSO CAUSE INTERSTITIAL PNEUMONITIS AND SENSITIZATION OF THE  
RESPIRATORY TRACT IN SUSCEPTIBLE INDIVIDUALS. CHR ONIC- MAY CAUSE  
SENSITIZATION IN SUSCEPTABLE INDIVIDUALS. CAN CAUSE CORNEAL DAMAGE,  
POLYCYTHEMIA, HYPERPLASIA OF THE THYROID GLAND, & DAMAGE TO ALPHA  
CELLS OF THE PANCREAS. INHALATION MAY CAUSE EMPHYS EMA OR PULMONARY  
FIBROTIC

DISEASE.

Explanation of Carcinogenicity:NICKEL IS LISTED AS A PROBABLE HUMAN  
CARCINOGEN. CHROMIUM IS LISTED AS A HUMAN CARCINOGEN. NICKEL &  
CHROMIUM HAVE BEEN DETERMINED TO CAUSE CANCER IN EXPERIMENTAL  
ANIMALS (IARC, NTP).

Effects of Overexposure:SKIN-MAY CAUSE REDNESS & PAPULAR FORMATION IN  
SUSCEPTIBLE INDIVIDUALS, WHICH USUALLY OCCURS IN THE FOLDS OF THE  
SKIN. MAY CAUSE ULCERS PROGRESSING TO DRY & SCALY SKIN, FEVER.  
EYE-MAY CAUSE IRRITATION , EXPERIENCED AS REDNESS & E

XCESS REDNESS

OF THE CONJUNCTIVA. SWALLOWING-MAY CAUSE NAUSEA, ABDOMIAL PAIN,  
VOMITING, DIARRHEA, CNS DEPRESSION, & BURNING SENSATION.  
INHALATION-MAY CAUSE RESPIRATORY TRAC T IRRITATION, WITH CHEST  
PAIN, VOMITING, DIARRHEA, BURNING SENSATION, & CNS DEPRESSION.  
CHRONIC SKIN CONTACT MAY SPREAD TO THE WHOLE BODY WITH LESIOINS,  
ITCHING, SORENESS, BURNING SENSATION AND REDNE SS.

Medical Cond 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 AND 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.

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

Flash Point:NONE  
Lower Limits:NONE  
Upper Limits:NONE  
Extinguishing Media:USE SPECIAL DRY POWDER METAL EXTINGUISHING MATERIAL TO EXTINGUISH METAL FIRES. USE APPROPRIATE EXTINGUISHER TO EXTINGUISH COMBUSTABLE MATERIALS THAT MAY BE IGNITED BY THERMAL FLAME.  
Fire Fighting Procedures:CONSULT AND COMPLY WITH ANSI Z49.1 SAFETY IN WELDING AND CUTTING, NFPA51B STANDARD FOR FIRE PREVENTION IN USE OF CUTTING AND WELDING PROCESSES. NFPA51 OXYGEN-FUEL GAS SYSTEMS FOR WELDING AND CUTTING, AND NFPA58 STANDARD FOR THE STORAGE AND HANDLING OF LIQUIFIED PETROLEUM GASES.  
Unusual Fire/Explosion Hazard:AIRBORNE DUST PARTICLES, ESPECIALLY METAL DUST, AND ACCUMULATION OF SUCH SHOULD BE TREATED AS EXPLOSIVES. TO MINIMIZE DANGER FROM DUST EXPLOSIONS, ADEQUATE VENTILATION SHOULD BE PROVIDED TO SPRAY BOOTH IN ACCORDANCE WITH AMERICAN WELDING SOCIETY PUBLICATION AWS2.1-73, AND ACGIH PUBLICATION "INDUSTRIAL VENTILATION".

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

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

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

Other Precautions:CAUTION: WHEN THERMAL SPRAYING - ELECTRICITY CAN CAUSE FATAL SHOCK! DO NOT TOUCH LIVE ELE

CRITICAL PARTS! ARC RAYS CAN  
BURN EYES AND SKIN! WEAR RECOMMENDED EYE AND BODY PROTECTION.  
FUMES, GAS, & DUST CAN HARM YOUR HEALTH. PROVIDE ENOUGH  
VENTILATION AND WEAR RESPIRATORS.

===== 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.

Supplemental Safety and Health

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  
RESPIRATORS.(OTHER INFO)

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

HCC:N1

Boiling Pt:B.P. Text:NONE

Vapor Density:N/VOLATILE

Appearance and Odor:DUSTY YELLOW GRAY POWDER

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

Stability Indicator/Materials to Avoid:YES  
NONE KNOWN

Stability Condition to Avoid:NONE KNOWN

Hazardous Decomposition Products:WHEN THERMAL SPRAYING, DECOMPOSITION  
PRODUCTS WILL VARY WITH OPERATING CONDITIONS. DECOMPOSITION  
PRODUCTS OF NORMAL OPERATION FROM THIS THERMAL SPRAY POWDER  
(OXIDES, SUB-OXIDES, ETC)

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

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

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

Transport Information:PROPER SHIPPING NAME: METAL ALLOY POWDER NOI ITEM  
136500 SUB 1.

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

SARA

