

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

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Info Phone Num:317-240-2650

Emergency Phone Num:317-240-2209

Preparer's Name:DELMAR BEIGHT

Chemtec 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:0V

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Composition/Information on Ingredients
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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

Name: SILICON
CAS: 7440-21-3
RTECS #: VW0400000
Minimum % Wt: 1.
Maximum % 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 SUSCEPTIBLE INDIVIDUALS, WHICH USUALLY OCCURS IN THE
FOLDS OF THE SKIN. EYES: MAY CAUSE IRRITATION. INGESTION: M

AY
CAUSE NERVOUS SYSTEM DEPRESSION. INHALATION: MAY CAUSE
RESPIRATORY TRACT IRRITATION & CENTRAL NERVOUS SYSTEM DEPRESSION.
MAY ALSO CAUSE INTERSTITIAL PNEUMONITIS AND SENSITIZATION OF THE
RESPIRATORY TRACT IN SUSCEPTIBLE INDIVIDUALS. CHRONIC- MAY CAUSE
SENSITIZATION IN SUSCEPTIBLE INDIVIDUALS. CAN CAUSE CORNEAL DAMAGE,
POLYCYTHEMIA, HYPERPLASIA OF THE THYROID GLAND, & DAMAGE TO ALPHA
CELLS OF THE PANCREAS. INHALATION MAY CAUSE EMPHYSEMA 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 &

EXCESS REDNESS
OF THE CONJUNCTIVA. SWALLOWING- MAY CAUSE NAUSEA, ABDOMINAL PAIN,
VOMITING, DIARRHEA, CNS DEPRESSION, & BURNING SENSATION.
INHALATION- MAY CAUSE RESPIRATORY TRACT IRRITATION, WITH CHEST
PAIN, VOMITING, DIARRHEA, BURNING SENSATION, & CNS DEPRESSION.
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

R FIBROTIC PULMONARY DISEASE. MAY ALSO AGGRAVATE AN EXISTING DERMATITIS.

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First Aid Measures
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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.

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Fire Fighting Measures
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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 COMBUSTIBLE 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 AWS C2.1-73, AND ACGIH PUBLICATION "INDUSTRIAL VENTILATION".

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

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Handling and Storage
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Other Precautions:CAUTION: WHEN THERMAL SPRAYING - ELECTRICITY CAN CAUSE FATAL SHOCK! DO NOT TOUCH LIVE ELECTRICAL

ELECTRICAL 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. DE

COMPOSITION

PRODUCTS OF NORMAL OPERATION FROM THIS THERMAL SPRAY POWDER (OXIDES, SUB-OXIDES, ETC)

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

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

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

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

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

SARA

Title III Information:7440-48-4, COBALT,