

PRAXAIR SURFACE TECHNOLOGIES INC -- NI-289 (PRODUCT CODE 036085-05) --  
3439-01-426-5207

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

Product ID:NI-289 (PRODUCT CODE 036085-05)

MSDS Date:01/22/1992

FSC:3439

NIIN:01-426-5207

Status Code:A

MSDS Number: CJSCB

=== 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: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:20.  
Maxumum % Wt:50.  
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:5.  
Maxumum % Wt:20.  
OSHA PEL:15 MG/M3  
ACGIH TLV:10 MG/M3

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

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Hazards Identification  
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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 PAPULAR FO

RMATION IN SUSCEPTABLE INDIVIDUALS, WHICH USUALLY OCCURS IN THE FOLDS OF THE SKIN. MAY CAUSE ULCERS. EYES: MAY CAUSE IRRITATION. INGESTION: MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. INHALATION: MAY CAUSE RESPIRATORY TRACT IRRITATION AND CENTRAL NERVOUS SYSTEM DEPRESSION. MAY ALSO CAUSE INTERSTITIAL PNEUMONITIS & SENSITIZATION OF THE RESPIRATORY TRACT IN SUSCEPTIBLE INDIVIDUALS. CHRONIC: CHRONIC ECZEMA/NEURODERMATITIS FROM NICKEL DOES NOT REQUIRED CONTINUOUS ME

TAL CONTACT. MAY CAUSE CORNEAL DAMAGE, POLYCYTHEMIA, HYPERPLASIA OF THE THYROID GLAND.

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 . MAY CAUSE DRY & SCALY SKIN, FEVER. EYE-MAY CAUSE IRRITATION, EXPERIENCED AS REDNESS & EXCESS REDNESS OF THE CONJUNCTIVA. SWA

LLOWING-MAY CAUSE NAUSEA, ABDOMIAL PAIN, VOMITING, DIARRHEA, & BURNING SENSATION. DIZZINESS, INCOORDINATION, ETC. MAY RESULT FROM CENTRAL NERVOUS SYSTEM DEPRESSION. INHALATION-MAY CAUSE RESPIRATORY TRACT IRRITATION, WITH CHEST PAIN, VOMITING, DIARRHEA, BURNING SENSATION, & CNS DEPRESSION.

Medical Cond 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 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 OPTHALMOLOGIST.

===== 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 BOOT H IN ACCORDANCE WITH AMERICAN WELDING SOCIETY PUBLICATION AWS C2.1-73, 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 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 =====

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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. REASONABLY EXPECTED.  
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:NOT REGULATED

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

SARA Title III Information:7440-02-0, NICKEL,