

PRAXAIR SURFACE TECHNOLOGIES INC -- NI-362-3 (PRODUCT CODE 036138-15) --  
3439-01-426-5235

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

Product ID:NI-362-3 (PRODUCT CODE 036138-15)  
MSDS Date:08/23/1993  
FSC:3439  
NIIN:01-426-5235  
Status Code:A  
MSDS Number: CJSHF  
=== Responsible Party ===  
Company Name:PRAXAIR SURFACE TECHNOLOGIES INC  
Address:1555 MAIN STREET  
City:INDIANAPOLIS  
State:IN  
ZIP:46224-3283  
Country:US

Info Phone Num:317-240-2650  
Emergency Phone Num:317-240-2209  
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:SP0490-95-D-4037

CAGE:0VYG8

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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: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 BORON  
CAS:11099-25-5  
Minumum % Wt:5.  
Maxumum % Wt:20.

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

Ingred Name:IRON  
CAS:7439-89-6  
RTECS #:NO4565500  
Minumum % Wt:1.  
Maxumum % Wt:5.

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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:ACUTE- SKIN: MAY CAUSE ALLERGIC  
DERMATITIS. MAY CAUSE ULCERS. EYES: MAY CAUSE IRRITATION.  
INHALATION: MAY CAUSE RESPIRATORY TRACT IRRIT

ATION. MAY ALSO CAUSE

INTERSTITIAL PNEUMONITIS & SENSITIZATION OF THE RESPIRATORY TRACT IN SUSCEPTIBLE INDIVIDUALS. CHRONIC- MAY CAUSE SENSITIZATION IN SUSCEPTIBLE INDIVIDUALS. EYES: CAN CAUSE CORNEAL DAMAGE, POLYCYTHEMIA, HYPERPLASIA OF THE THYROID GLAND, & DAMAGE TO THE ALPHA CELLS OF THE PANCREAS. INHALATION: MAY CAUSE EMPHYSEMA OR PULMONARY FIBROTIC DISEASE. SKIN: CONTACT MAY SPREAD TO THE WHOLE BODY. ECZEMA/NEURODERMATITIS FROM NICKEL DOESN'T REQUIRED CONT

INUOUS METAL CONTACT.

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

Effects of Overexposure:ACUTE- SKIN: REDNESS & PAPULAR FORMATION IN SUSCEPTIBLE INDIVIDUALS. MAY CAUSE DRY & SCALY SKIN, FEVER. EYES: MAY CAUSE REDNESS & EXCESS REDNESS OF THE CONJUNCTIVA. INGESTION: MAY CAUSE NAUSEA, ABDOMI NAL PAIN, VOMITI

NG, DIARRHEA, CENTRAL

NERVOUS SYSTEM DEPRESSION, & BURNING SENSATION. INHALATION: MAY CAUSE CHEST PAIN, VOMITING, DIARRHEA, BURNING SENSATION, & CNS DEPRESSION. CHRONIC- SKIN: LESIONS, ITCHING, SORENESS, BURNING SENSATION & REDNESS MAY SPREAD TO THE WHOLE BODY.

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:INGESTION: 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

HTIS MATERIAL ARE MAINLY DUE TO ITS SENSITIZING & MILD IRRITATING PROPERTIES. THERE IS NO SPECIFIC ANTIDOTE. TREATMENT OF OVEREXPOSURE SHOULD BE DI RECTED AT CONTROL OF SYMPTOMS.

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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 TH

AT 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. NFPA51B 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 CA N 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 RECO

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:>AIR  
Appearance and Odor:GRAY POWDER

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

Stability Indicator/Materials to Avoid:YES  
NONE KNOWN  
Stability Condition to Avoid:NONE KNOWN  
Hazardous Decomposition Products:WHE  
N 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 PER LOCAL, STATE, AND FEDERAL REGULATIONS.

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

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

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

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