

WESTAIM AEROSPACE PRODUCTION -- NICKEL GRAPHITE POWDER -- 3439-01-103-6352

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

Product ID:NICKEL GRAPHITE POWDER

MSDS Date:02/26/1999

FSC:3439

NIIN:01-103-6352

Status Code:A

MSDS Number: CKDMM

=== Responsible Party ===

Company Name:WESTAIM AEROSPACE PRODUCTION

Address:10101-114TH ST- FORT SASKATCHEWAN

City:ALBERTA, CANADA, T8L 3W4

Country:CA

Info Phone Num:780-992-74

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Emergency Phone Num:403-992-7444

CAGE:36717

=== Contractor Identification ===

Company Name:PERFORMANCE ALLOYS

Address:1212 HIGHLAND AVENUE

Box:City:MANHATTAN BEACH

State:CA

ZIP:90266

Country:US

Phone:310-546-8459

Contract Num:SP0490-99-M-W168

CAGE:0A4S7

Company Name:WESTAIM AEROSPACE PRODUCTION

Address:10101-114TH ST- FORT SASKATCHEWAN

Box:City:ALBERTA, CANADA, T8L 3W4

Country:CA

Phone:780-992-7444

CAGE:36717

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

Ingred Name:N

NICKEL POWDER
CAS:7440-02-0
RTECS #:QR5950000
Minimum % Wt:60.
Maximum % Wt:85.
OSHA PEL:1 MG/M3
ACGIH TLV:1.5 MG/M3

Ingredient Name:GRAPHITE
CAS:7782-42-5
RTECS #:MD9659600
Minimum % Wt:15.
Maximum % Wt:45.
OSHA PEL:SEE TABLE Z-3
ACGIH TLV:2 MG/M3

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

LD50 LC50 Mixture:LD50=250 MG/KG (RAT INTRAPERITONEAL)

Routes of Entry: Inhalation:YES Skin:UNKNOWN Ingestion:YES

Reports of Carcinogenicity:NTP:UNKNOWN IARC:YES

Health Hazards Acute

Acute and Chronic:EYES: IRRITATION DUE TO MECHANICAL

ABRASION. SKIN: IRRITATION ON PROLONGED OR REPEATED CONTACT. SKIN

SENSITIZATION. INGESTION: GI TRACT IRRITATION WITH BURNING AND

DIARRHEA. CHRONIC: CHRONIC INHALATION OF NICKEL MAY PRODUCE

COUGHING, SHORTNESS OF BREATH, INCREASED SUSCEPTIBILITY TO

PULMONARY EDEMA, INTERSTITIAL FIBROSIS. REPEATED INHALATION OF

IMPURE GRAPHITE FOR YEARS MAY CAUSE GRAPHITOSIS, A PROGRESSIVE,

DISABLING PNEUMOPNEUMOSIS. EXPOSED PERSON MAY

BE ASYMPTOMATIC FOR

YEARS AND SUDDENLY BECOME DISABLED OR MAY DEVELOP HEADACHE, COUGH

DYSPNEA, CHEST TIGHTNESS, PAIN, DEPRESSION, DECREASED APPETITE,

BLACK SPUTUM AND DIGITAL CLUBBING.

Explanation of Carcinogenicity:METALLIC NICKEL AND CERTAIN NICKEL

ALLOYS ARE CLASSIFIED BY IARC AS GROUP 2B, POSSIBLY CARCINOGENIC TO

HUMANS, BASED ON INADEQUATE EVIDENCE OF EFFECTS TO HUMANS.

EPIDEMIOLOGY STUDIES HAVE DEMONSTRATED AN INCREASED RISK OF NASAL,

LUNG, AND POSSIBLE RISK OF

OROPHARYNGEAL CANCER, THE MOST LIKELY

CAUSATIVE AGENTS WERE ALLOYS OF NICKEL AND NOT METALLIC NICKEL

ITSELF.

Effects of Overexposure:EYES: IRRITATION, SKIN: IRRITATION. SKIN

SENSITIZATION: REDNESS, INFLAMMATION, SKIN ERUPTIONS. RECOVERY

USUALLY OCCURS WITHIN A WEEK OF DISCONTINUING EXPOSURE; HOWEVER, IN

SOME CASES, SEVERAL WEEKS MAY BE NEEDED. ONCE ACQUIRED, NICKEL

SENSITIVITY USUALLY PERSISTS. INGESTION: IRRITATION OF

GASTRO-INTESTINAL TRACT, CHARACTERIZED BY BURNING

AND DIARRHEA.

INHALATION: PERSONS EXPOSED TO IMPURE GRAPHIT E FOR YEARS MAY BE ASYMPTOMIC FOR YEARS AND THEN SUDDENLY BECOME DISABLED OR MAY DEVELOP HEADACHE, COUGH DYSPNEA TIGHTNESS IN THE CHEST, PAIN, DEPRESSION, DECREASED APPETITE, BLACK SPUTUM AND DIGITAL CLUBBING.

===== First Aid Measures =====

First Aid:EYE CONTACT: IMMEDIATELY FLUSH WITH RUNNING WATER FOR AT LEAST 15 MINUTES, KEEPING EYELIDS OPEN. GET MEDICAL ATTENTION IF IRRITATION PERSISTS. SKIN CONTACT: WASH CONTAMINATED AREA WITH SOAP AND WATE R. AVOID PROLONGED OR REPEATED CONTACT WITH SKIN. WASH AFTER HANDLING. REMOVE CONTAMINATED CLOTHING AND WASH BEFORE REUSE. INHALATION: ALLOW VICTIM TO REST IN A WELL VENTILATED AREA. SEEK IMMEDIA TE MEDICAL ATTENTION. INGESTION: NO ADDITIONAL INFORMATION.

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

Flash Point:NON-FLAMMABLE
Extinguishing Media:DRY CHEMICAL, ADDITIONAL GRAPHITE, DRY EARTH. FOR SURROUNDING FIRE: WATER FOG, STANDARD FOAM, CARBON DIOXIDE, DRY CHEMICAL.
Fire Fighting Procedures:MOVE CONTAINERS OF THE PRODUCT FROM THE AREA IF IT IS SAFE TO DO SO. DIKE FIRE CONTROL WATER FOR LATER DISPOSAL.
Unusual Fire/Explosion Hazard:THIS PRODUCT IS EXPECTED NOT TO EXPLODE IN RESPONSE TO MECHANICAL IMPACT, BUT DUST-AIR MIXTURES MAY BE EXPLOSIVE IN CONTACT WITH A SOURCE OF IGNITION, SUCH AS A SPARK.

===== Accidental Relea
se Measures =====

Spill Release Procedures:SMALL SPILLS SHOULD BE SWEEPED UP USING EITHER WET OR DRY METHODS. CLEANUP PERSONNEL SHOULD BE PROTECTED AGAINST DUST INHALATION AND DERMAL CONTACT. WEAR ADEQUATE PERSONAL PROTECTIVE EQUIPMENT AND AVOID DUST GENERATION.

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

Handling and Storage Precautions:CLEAN UP PERSONNEL MUST USE THE PROTECTIVE CLOTHING AND EQUIPMENT REQUIRED TO AVOID EXPOSURE. SAFET

Y SHOWERS AND EYE WASH STATIONS SHOULD BE PROVIDED IN THE WORK AREA. KEEP CONTAINER TIGHTLY CLOSED. STORE CONTAINERS IN A COOL WELL-VENTILATED AREA AWAY FROM MINERAL ACIDS AND INCOMPATIBLE MATERIALS.

Other Precautions:PROTECT CONTAINERS FROM PHYSICAL DAMAGE.

===== Exposure Controls/Personal Protection =====

Respiratory Protection:USE SUPPLIED AIR RESPIRATOR OR SCBA FOR EMERGENCIES, FIRES, EXPOSURES EXCEEDING 1000 TIMES LIMITS. IF AIRBORNE CONC. EXCEEDS LIMIT, USE AIR-PURIFYING RESPIRATOR. IF 50 TIMES LIMIT, USE FULL FACEPIECE RESPIRATOR. IF DUST, USE CARTRIDGE WITH DUST FILTER. FOR FUMES, USE CARTRIDGE WITH HEPA FILTER OR ONE APPROVED FOR FUME. USE NIOSH OR NIOSH/MSHA RESPIRATORS.

Ventilation:LOCAL EXHAUST FOR PRODUCT USE. PROVIDE ADEQUATE GENERAL VENTILATION WITH AN EQUAL VOLUME OF MAKE UP AIR.

Protective Gloves:GLOVES THAT ARE IMPERMEABLE TO DUST AND RESISTANT TO ABRASION.

Eye Protection:INDUSTRIAL SAFETY GLASSES WITH SIDE SHIELDS OR CHEMICAL GOGGLES.

Other Protective Equipment:THE USE OF CONTACT LENSES WHEN HANDLING THIS PRODUCT IS DISCOURAGED. LONG SLEEVED SHIRTS AND LONG LEGGED PANTS. BOOTS. SAFETY SHOWER AND EYE WASH STATION IN WORK AREA.

Work Hygienic Practices:LAUNDER CONTAMINATED CLOTHING BEFORE REUSE.

Supplemental Safety and Health

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

HCC:T6

Boiling Pt:=2760.C, 5000.F

B.P. Text:NICKEL

Melt/Freeze Pt:=1455.C, #####F

M.P/F.P

Text:NICKEL

Vapor Pres:0 MM OF HG (@ 20C)

Spec Gravity:4.09-6.18(WATER=1)

Solubility in Water:INSOLUBLE

Appearance and Odor:SOLID,SILVERY GREY METALLIC POWDER (DARK), ODORLESS.

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

Stability Indicator/Materials to Avoid:YES

MOISTURE, STRONG OXIDIZING AGENTS (ESPECIALLY WHEN HEATED). CHLORINATED PARAFFINS (ALKANES), AMMONIUM NITRATE, HYDRAZINE, PERFORMIC ACID, PHOSPHOROUS, SELENIUM, SULPHUR, AND TITANIUM.,

Hazardous Dec

Composition Products: CONTACT BETWEEN NICKEL AND MINERAL ACIDS LIBERATES HYDROGEN GAS WHICH CAN FORM EXPLOSIVE MIXTURES WITH AIR.

===== Toxicological Information =====

Toxicological Information: TLV (ACGIH 1996) ACGIH TLV-TWA (1996) 1.5 MG/M3 FOR NICKEL METAL AND INSOLUBLE COMPOUNDS OF NI. TOXICOLOGICALLY SYNERGISTIC PRODUCTS: NONE KNOWN. TERATOGENIC EFFECTS: THERE ARE NO REPORTS THAT EXPOSURE TO NICKEL HAS RESULTED IN BIRTH DEFECTS IN HUMANS.

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

Ecological: EXCOTOXICITY: NICKEL FORMS MANY WATER SOLUBLE COMPOUNDS. AT LOW LEVELS (APPROXIMATELY 0.05 MG/LITER) IN WATER. NICKEL STIMULATES THE GROWTH OF ALGAE WHILE AT HIGHER CONCENTRATIONS (>0.05 MG/L) IT IS GENERALLY TOXIC. NICKEL HAS BOTH AN ACUTE AND A CHRONIC EFFECT ON FISH AND AQUATIC INVERTEBRATES. STUDIES OF NICKEL IN THE AQUATIC FOOD CHAIN SHOWS DECREASING NICKEL CONCENTRATIONS AT INCREASING LEVELS IN THE FOOD CHAIN INDICATING THAT THERE IS NO BIOMAGNIFICATION OF NICKEL.

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

Waste Disposal Methods: DISPOSE OF WASTE ACCORDING TO LOCAL, PROVINCIAL, OR FEDERAL ENVIRONMENTAL REGULATIONS OR CONSULT YOUR ENVIRONMENTAL ADVISOR. RECYCLE TO PROCESS WHENEVER POSSIBLE.

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

Transport Information: NOT REGULATED UNDER TDG (CANADA). AIR TRANSPORT (I CAO/IATA): NOT REGULATED. MARINE TRANSPORT (IMDG CODE) : NOT REGULATED. WHMIS CLASS D-28: MATERIAL CAUSING OTHER TOXIC EFFECTS (TOXIC). FEDERAL AND PROVINCIAL REGULATIONS: CEPA DSL: NICKEL GRAPHIC POWDER.

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