

**MARMON/KEYSTONE CORP SUB OF THE MARMOM GROUP INC --
STAINLESS STEELS AISI/SAE GRADES 300 & 400 SERIES,SPEC ALLOY --
9510-00D003418**

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

Product ID:STAINLESS STEELS AISI/SAE GRADES 300 & 400 SERIES,SPEC ALLOY
MSDS Date:01/01/1997
FSC:9510
NIIN:00D003418
MSDS Number: BWGPZ
=== Responsible Party ===
Company Name:MARMON/KEYSTONE CORP SUB OF THE MARMOM GROUP INC
Address:1312 VALVOLINE RD
Box:992
City:EAST BUTLER
State:PA
ZIP:16029
Country:US
Info Phone Num:412-283-3000
Emergency Phone Num:412-283-3000
CAGE:3A044
=== Contractor Identification ===
Company Name:MARMON/KEYSTONE CORP
Box:City:BUTLER
State:PA
ZIP:16001
Country:US
Phone:412-283-4500
CAGE:3A044

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

Ingred Name:IRON OXIDE (IRON BASE METAL)
CAS:1309-37-1
RTECS #:NO7400000
Fraction by Wt: 38-86.5%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:10 MG/M3 (FE)
ACGIH TLV:5MG (FE) /M3FUME,B2;96

Ingred Name:ALUMINUM (SARA 313) (INGREDS @2 THRU 16 ARE ALLOYING
ELEMENTS)
CAS:7429-90-5
RTECS #:BD0330000
Fraction by Wt: <.01-.5%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:15 MG/M3 DUST
ACGIH TLV:10 MG/M3 DUST; 9596

Ingred Name:GRAPHITE, SYNTHETIC
CAS:7440-44-0
RTECS #:FF5250100
Fraction by Wt: <.03-2%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:15 MG/M3 TDUST
ACGIH TLV:2 MG/M3 TDUST; 9596

Ingred Name:CHROMIUM (SARA 313) (CERCLA)
CAS:7440-47-3
RTECS #:GB4200000
Fraction by Wt: <10-27%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:1 MG/M3
ACGIH TLV:0.5 MG/M3; 9596
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:COBALT (SARA 313), 0.01-0.75%.
CAS:7440-48-4
RTECS #:GF8750000
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED
OSHA PEL:0.1 MG/M3
ACGIH TLV:0.02 MG/M3; A3; 9596

Ingred Name:COPPER (SARA 313) (CERCLA), <0.18-4.5%.
CAS:7440-50-8
RTECS #:GL5325000
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED
OSHA PEL:0.1MG/M3 FUME/1 DUST
ACGIH TLV:0.2 MG/M3 FUME; 9596
EPA Rpt Qty:5000 LBS
DOT Rpt Qty:5000 LBS

Ingred Name:MANGANESE (SARA 313)
CAS:7439-96-5
RTECS #:009275000
Fraction by Wt: <2-10%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:C, 5 MG/M3 (FUME)
ACGIH TLV:0.2 MG/M3; 9596

Ingred Name:MOLYBDENUM
CAS:7439-98-7
RTECS #:QA4680000
Fraction by Wt: <.04-5%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:10 PPM.
ACGIH TLV:10 PPM.

Ingred Name:NICKEL (SARA 313) (CERCLA), <0.12-34%.
CAS:7440-02-0
RTECS #:QR5950000
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED
OSHA PEL:1 MG/M3
ACGIH TLV:1 MG/M3; 9596

Ingred Name:PHOSPHOROUS (YELLOW) (SARA 302/313) (CERCLA), <0.01-0.06%.
CAS:7723-14-0
RTECS #:TH3500000
Fraction by Wt: SEE ING

Other REC Limits:NONE RECOMMENDED
OSHA PEL:0.1 MG/M3
ACGIH TLV:0.02 PPM; 9596
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:SELENIUM (SARA 313) (CERCLA)
CAS:7782-49-2
RTECS #:VS7700000
Fraction by Wt: <.01-.3%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:0.2 MG/M3
ACGIH TLV:0.2 MG/M3; 9596
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:SILICON
CAS:7440-21-3
RTECS #:VW0400000
Fraction by Wt: <.15-2%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:15 MG/M3 TDUST
ACGIH TLV:10 MG/M3 TDUST; 9596

Ingred Name:SULFUR, <0.01-0.06%.
CAS:7704-34-9
RTECS #:WS4250000
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED

Ingred Name:TITANIUM
CAS:7440-32-6
RTECS #:XR1700000
Fraction by Wt: <.01-.7%
Other REC Limits:NONE RECOMMENDED

Ingred Name:NIOBIUM (ALSO CALLED COLUMBIUM), COLUMBIUM PLUS TANTALUM =
<0.01-1.10%.
CAS:7440-03-1
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED

Ingred Name:TANTALUM. TANTALUM PLUS COLUMBIUM = <0.01-1.10%.
CAS:7440-25-7
RTECS #:WW5505000
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED
OSHA PEL:5 MG/M3
ACGIH TLV:5 MG/M3; DUST; 9596

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

LD50 LC50 Mixture:NONE SPECIFIED BY MANUFACTURER.
Routes of Entry: Inhalation:YES Skin:NO Ingestion:NO
Reports of Carcinogenicity:NTP:YES IARC:YES OSHA:NO
Health Hazards Acute and Chronic:SS PRODUCTS IN SOLID STATE PRESENT NO
INHAL/INGEST/CONTACT HEALTH HAZ.OPERATIONS(LIKE

BURN,WELD,SAW,BRAZE,GRIND,MACHINE)WHICH RESULT IN ELEVATING TEMP OF
PRODUCT TO/>MELT PT OR RESULT IN GENERATION OF AIRBORNE
PARTICULATES MAY PRESENT HAZ.MAJOR EXPO HAZ-INHAL.EXCESSIVE
METALLIC FUME/DUST INHAL MAY RESULT IN(SIGN/SYMPT)

Explanation of Carcinogenicity:PER MSDS:CHROMIUM & NICKEL HAVE BEEN ID
BY IARC/NTP AS POTENTIAL CARC CAUSING AGENTS.

Effects of Overexposure:HEALTH:IRRIT EYE/NOSE/THROAT.HI CONCEN
FUME/DUST OF IRON-OXIDE,MN,CU,ZN,PB MAY RESULT IN METAL FUME
FEVER.TYP SYMPT LASAT 12-48HRS,CONSIST OF METALLIC TASTE IN
MOUTH,DRYNESS,IRRIT THROAT,CHILLS,FEVER. CHRONIC/PROL INHAL OF HI
CONCEN OF FUME/DUST:IRRIT EYE/NOSE/THROAT/RESP TRACT,SKIN/MUC MEMB
LESIONS,SKIN RASH,(SUPPLEME)

Medical Cond Aggravated by Exposure:INDIVIDUALS W/CHRONIC RESP
DISORDERS(ASTHMA,CHRONIC BRONCHITIS,EMPHYSEMA,ETC)MAY BE ADVERSELY
AFFECTED BY ANY FUME OR AIRBORNE PARTICULATE MATTER EXPO.

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

First Aid:INHAL:REMOVE TO FRESH AIR.CONDITION CONTINUES CONSULT
PHYSICIAN.EYE:FLUSH THOROUGHLY W/RUNNING WATER TO REMOVE
PARTICULATE.OBTAIN MED ATTN.SKIN:REMOVE PARTICLES BY WASHING
THOROUGHLY W/SOAP/WATER.SEEK MED ATTN IF CONDITION
PERISTS.INGEST:IF SIGNIFICANT AMTS OF METAL ARE INGESTED CONSULT
PHYSICIAN.

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

Flash Point:NA
Autoignition Temp:Autoignition Temp Text:NP
Lower Limits:NA
Upper Limits:NA
Extinguishing Media:USE DRY POWDER,SAND ON MOLTEN METAL.DONT USE H2O ON
MOLTEN METAL/FIRES CAUSED BY FINE METAL PARTICLES.
Fire Fighting Procedures:NONE SPECIFIED BY MANUFACTURER.
Unusual Fire/Explosion Hazard:SS TUBULAR PRODS DONT PRESENT FIRE/EXPLO
HAZ UNDER NOR CONDITIONS.FINE METAL PARTICLES(PROD IN GRIND/SAW)CAN
BURN.HI CONCEN OF METALLIC FINES IN AIR-EXPO HAZ.

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

Spill Release Procedures:FINE TURNINGS AND SMALL CHIPS SHOULD BE SWEEP
OR VACUUMED.SCRAP METAL CAN BE RECLAIMED FOR REUSE.
Neutralizing Agent:NONE SPECIFIED BY MANUFACTURER.

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

Handling and Storage Precautions:IN WELD PRECAUT SHOULD BE TAKEN FOR
AIRBORNE CONTAM WHICH MAY ORIGINATE FROM CPMDS OF WELD ROD.
Other Precautions:ARC/SPARK GENERATED WHEN WELD/BURN COULD BE IGN
SOURCE FOR COMBUST/FLAMM MATLS. INGREDs SUMMARY OF ELEMENTS USED IN
ALLOYING SS.VAR GRADES OF STEEL WILL CONTAIN DIFFERENT COMBINATIONS
OF ELEMENTS.TRAC EELEMENTS MAY ALSO BE PRESENT IN(SUPPL)

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

Respiratory Protection:APPROPRIATE DUST/MIST/FUME RESPIRATOR SHOULD BE
USED TO AVOID EXCESSIVE INHAL OF PARTICULATES.IF EXPO LIMITS ARE

REACHED OR EXCEEDED USE NIOSH APPROVED EQUIPMENT.
Ventilation:NONE SPECIFIED BY MANUFACTURER.
Protective Gloves:PROTECTIVE GLOVES FOR WELD/BURN/HNDLG
Eye Protection:SAF GLASSES-GRIND/CUT,FC SHIELD-WELD/CUT
Other Protective Equipment:AS REQUIRED DEPENDING ON OPERATIONS AND
SAFETY CODES.
Work Hygienic Practices:NONE SPECIFIED BY MANUFACTURER.
Supplemental Safety and Health
OTH PRECA:MINUTE AMTS. SIGN/SYMPT:PULM
EFFECTS,SIDEROSIS,BRONCHITIS,PNEUITIS,LACK COORD,LIV/KID DMG,BONE
DEFORMITY,NECROSIS OF MANDIBLE,NASAL/BARONCH IRRIT,GI
DISTURB,GARLIC BREATH ODOR,LUNG EDEMA.

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

HCC:N1
Boiling Pt:B.P. Text:NA
Melt/Freeze Pt:M.P/F.P Text:2400F,1316C
Decomp Temp:Decomp Text:NP
Vapor Pres:NA
Vapor Density:NA
Spec Gravity:8
pH:NA
Viscosity:NP
Evaporation Rate & Reference:NP
Solubility in Water:NA
Appearance and Odor:SOLID, SILVERY-GREY, ODORLESS
Percent Volatiles by Volume:NA
Corrosion Rate:NP

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

Stability Indicator/Materials to Avoid:YES
RXS W/STRONG ACIDS TO FORM HYDROGEN GAS.
Stability Condition to Avoid:SS @TEMPS >MELT PT LIBERATE FUMES
CONTAINING OXIDES OF IRON AND ALLOHING ELEMENTS.
Hazardous Decomposition Products:METALLIC DUST OR FUMES MAY BE PRODUCED
DURING WELDING/BURNING/GRINDING/POSSIBLY MACHINING.REFER TO ANSI
Z49.1.

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

Waste Disposal Methods:USED OR UNUSED PRODUCT SHOULD BE DISPO OF IAW
LOCAL, STATE AND FEDERAL REGULATIONS/LAWS.DISPOSER MUST COMPLY
W/LOCAL, STATE AND FEDERAL DISPOSAL OR DISCHARGE LAWS.

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