

**MARMON/KEYSTONE CORP SUB OF THE MARMOM GROUP INC --
CARBON AND ALLOY STEELS AISI/SAE GRADES 10XX THRU 93XX -- 9510-
00D003417**

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

Product ID:CARBON AND ALLOY STEELS AISI/SAE GRADES 10XX THRU 93XX
MSDS Date:01/01/1997
FSC:9510
NIIN:00D003417
MSDS Number: BWGPY
=== 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), 86.5-99.5
CAS:1309-37-1
RTECS #:NO7400000
Fraction by Wt: SEE ING
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 18 ALLOYING ELEMENTS)
CAS:7429-90-5
RTECS #:BD0330000
Fraction by Wt: <.1-0.5%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:15 MG/M3 DUST
ACGIH TLV:10 MG/M3 DUST; 9596

Ingred Name:BISMUTH
CAS:7440-69-9
RTECS #:EB2600000
Fraction by Wt: <.2-0.5%
Other REC Limits:NONE RECOMMENDED

Ingred Name:BORON
CAS:7440-42-8

RTECS #:ED7350000
Fraction by Wt: <.01-1%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:10 MG B2O3/M3
ACGIH TLV:10 MG B2O3/M3

Ingred Name:GRAPHITE, SYNTHETIC
CAS:7440-44-0
RTECS #:FF5250100
Fraction by Wt: <.1-1.5%
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: <.4-10%
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:NIOBIUM (ALSO CALLED COLUMBIUM), <0.15-0.35%
CAS:7440-03-1
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED

Ingred Name:COPPER (SARA 313) (CERCLA)
CAS:7440-50-8
RTECS #:GL5325000
Fraction by Wt: <.3-1.9%
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:LEAD (SARA 313) (CERCLA), <0.01-0.15%
CAS:7439-92-1
RTECS #:OF7525000
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED
OSHA PEL:SEE 1910.1025
ACGIH TLV:0.05MG/M3, A3; 9596
EPA Rpt Qty:1 LB
DOT Rpt Qty:1 LB

Ingred Name:MANGANESE (SARA 313)
CAS:7439-96-5
RTECS #:009275000
Fraction by Wt: <0.4-.7%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:C, 5 MG/M3 (FUME)
ACGIH TLV:0.2 MG/M3; 9596

Ingred Name:MOLYBDENUM, <0.15-1.10%
CAS:7439-98-7
RTECS #:QA4680000
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED
OSHA PEL:10 PPM.
ACGIH TLV:10 PPM.

Ingred Name:NICKEL (SARA 313) (CERCLA)
CAS:7440-02-0
RTECS #:QR5950000
Fraction by Wt: <.01-10%
Other REC Limits:NONE RECOMMENDED
OSHA PEL:1 MG/M3
ACGIH TLV:1 MG/M3; 9596

Ingred Name:PHOSPHOROUS (YELLOW) (SARA 302/313) (CERCLA), <0.040-0.012%
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: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, <0.50-0.35%
CAS:7704-34-9
RTECS #:WS4250000
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED

Ingred Name:VANADIUM (SARA 313), <0.01-0.15%
CAS:7440-62-2
RTECS #:YW1355000
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED

Ingred Name:ZINC OXIDE (SARA 313) (CERCLA), 2 OZ/FT2.
CAS:1314-13-2
RTECS #:ZH4810000
Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED
OSHA PEL:15 MG/M3 TDUST
ACGIH TLV:10 MG/M3 TDUST; 9596

Ingred Name:ALUMINUM (SARA 313), 0.5 OZ/FT2.
CAS:7429-90-5
RTECS #:BD0330000

Fraction by Wt: SEE ING
Other REC Limits:NONE RECOMMENDED
OSHA PEL:15 MG/M3 DUST
ACGIH TLV:10 MG/M3 DUST; 9596

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===== 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:STEEL PRODUCTS IN SOLID STATE PRESENT
NO INHAL/INGEST/CONTACT HEALTH HAZ.OPERATIONS LIKE
BURN,WELD,SAW,BRAZE,GRIND,MACHINE WHICH RESULT IN ELEVATING TEMPS
OF PROD TO/ABOVE MELT PT OR RESULT IN GENERAT ION OF AIRBORNE
PARTICULATES MAY PRESENT HAZ.MAJOR EXPO HAZ IS INHAL.EXCESSIVE
INHAL OF METALLIC FUMES/DUST (SIGN/SYMP)
Explanation of Carcinogenicity:PER MSDS:NICKEL & CHROMIUM HAVE BEEN ID
BY IARC/NTP AS POTENTIAL CANCER CAUSING AGENT.
Effects of Overexposure:HEALTH:MAY RESULT IN IRRIT OF
EYE/NOSE/THROAT.HI FUME/DUST OF IRON-OXIDE/MN/CU/ZN/PD FUMES MAY
RESULT IN METAL FUME FEVER.TYPICAL SYM LAST 12-48HRS,CONSIST OF
METALLIC TASTE IM MOUTH,DRYNESS,IRRIT THR
OAT,CHILLS,FEVER.CHRONIC:FIBROTIC CHANGES TO LUNG TISSUE,LESIONS OF
SKIN/MUC MEMB,CANC,SIDEROSIS,PULM EFFECTS.(SUPPLEM)
Medical Cond Aggravated by Exposure:INDIVIDUALS W/CHRONIC RESP
DISORDERS(ASTHMA,CHRONIC BRONCHITIS,EMPHYSEMA,ETC)MAY BE ADVERSELY
AFFECTED BY ANY FUME OR AIRBORNE APTICULATE MATTER EXPO.

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===== 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.

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

Flash Point:NA
Autoignition Temp:Autoignition Temp Text:NP
Lower Limits:NA
Upper Limits:NA
Extinguishing Media:FOR MOLTEN METAL USE DRY POWER OR SAND.DONT USE
WATER ON MOLTEN METAL.
Fire Fighting Procedures:NONE SPECIFIED BY MANUFACTURER.
Unusual Fire/Explosion Hazard:STEEL TUBULAR PRODS DONT PRESENT
FIRE/EXPLO HAZ UNDER NORMAL CONDITIONS.FINE METAL PARITCLES SUCH AS
PRODUCED IN GRINDING/SAWING/CAN BURN.HI CONC OF (SUPPLEMEN)

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

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

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

Handling and Storage Precautions:IN WELDING PRECAUTIONS SHOULD BE TAKEN FOR AIRBORNE CONTAM WHICH MAY ORIGINATE FRM COMPO OF WELD ROD.
Other Precautions:ARC/SPARK GENERATED WHEN WELD/BURN COULD BE IGN SOURCE FOR COMBUST/FLAMM MATLS. INGRES LISTED SUMMARY OF ELEMENTS USED IN LLOYING STEEL.VAR GRADES OF STEEL WILL CONTAIN DIFF COMBINATIONS OF ELEMENTS S TATED IN INGREGS.TRACE ELEMENTS (SUPPLE)

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

Respiratory Protection:APPROPRIATE DUST/MIST/FUME RESPIRATOR SHOLD BE USED TO AVOID EXCESSIVE INAHL 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

SIGN/SYMPT:ANEMIA,URINARY DYSFUNCTIN,WEAK,CONSTIPATION,NAU,NERV DISORDER,BRONCHITIS,PNEUITIS,LACK OF COORDIN,RESP TRACT IRRIT,LIV/KID DMG,BONE DEFORMITY,NECROSIS OF MANDIBLE,EDEMA OF LUNGS,EMPHYSEMA,P NEUMONIA. FIRE/EXPLO:METALLIC FINES IN AIR MAY PRESENT EXPLO HAZ. OTH PRECAUT:ALSO PRESENT IN MINUTE AMTS.

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

HCC:N1

Boiling Pt:B.P. Text:NA

Melt/Freeze Pt:M.P/F.P Text:2800F,1538C

Decomp Temp:Decomp Text:NP

Vapor Pres:NA

Vapor Density:NA

Spec Gravity:7

pH:NA

Viscosity:NP

Evaporation Rate & Reference:NP

Solubility in Water:NA

Appearance and Odor:SOLID, GREY-BALCK, ODORLESS

Percent Volatiles by Volume:NA

Corrosion Rate:NP

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

Stability Indicator/Materials to Avoid:YES

REACTS W/STRONG ACIDS TO FORM HYDROGEN GAS.

Stability Condition to Avoid:STEEL @TEMPS >MELTPT MAY LIBERATE FUME CONTAIN OXIDES OF IRON & ALLOYING ELEMENTS.AVOID GENERATION OF AIRBORNE FUME/DUST

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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