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U S ALLOY CO DBA WASHINGTON ALLOY CO -- ER4043, ELECTRODE, WELDING (SEE SUPPL.) --  
3439-00-262-2600

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

Product ID:ER4043, ELECTRODE, WELDING (SEE SUPPL.)

MSDS Date:01/09/1999

FSC:3439

NIIN:00-262-2600

Status Code:A

MSDS Number: CLMYD

=== Responsible Party ===

Company Name:U S ALLOY CO DBA WASHINGTON ALLOY CO

Address:9809 160TH ST E

Box:73909

City:PUYALLUP

State:

WA

ZIP:98373

Country:US

Info Phone Num:206-848-2230

Emergency Phone Num:206-848-2230/ 800-558-5825

Resp. Party Other MSDS Num.:ALUMINIUM WIRE

CAGE:0AZS7

=== Contractor Identification ===

Company Name:JO-JON INC

Address:360 FREEPORT BLVD SUITE 1 & 2

Box:UNKNOWN

City:SPARKS

State:NV

ZIP:89431

Country:US

Phone:702-356-6988

Contract Num:SP0490-00-D-4064

CAGE:009J0

Company Name:U S ALLOY CO DBA WASHINGTON ALLOY CO

Address:9809 160TH ST E

Box:73909

City:PUYALLUP

State:WA

ZIP:98373

Country:US

Phone:20

6-848-2230  
CAGE:0AZS7

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

Ingred Name:ALUMINUM (AL)  
CAS:7429-90-5  
RTECS #:BD0330000  
Fraction by Wt: BALANCE  
OSHA PEL:15 MG/M3  
ACGIH TLV:10 MG/M3

Ingred Name:COPPER (CU)  
CAS:7440-50-8  
RTECS #:GL5325000  
&lt; Wt:1.  
OSHA PEL:1 MG/M3 (DUST)  
ACGIH TLV:1 MG/M3  
EPA Rpt Qty:5000 LBS  
DOT Rpt Qty:5000 LBS

Ingred Name:MAGNESIUM (MG)  
CAS:7439-95-4  
RTECS #:OM2100000  
Minumum % Wt:2.  
Maxumum % Wt:6.  
OSHA PEL:15 MG/M3  
ACGIH TLV:10 MG/M3

Ingred  
Name:BERYLLIUM (BE)  
CAS:7740-41-7  
RTECS #:DS1750000  
Minumum % Wt:.04  
Maxumum % Wt:.07  
OSHA PEL:0.002 MG/M3(TWA)  
ACGIH TLV:0.002 MG/M3(TWA)  
ACGIH STEL:0.002 MG/M3  
EPA Rpt Qty:10 LBS  
DOT Rpt Qty:10 LBS

Ingred Name:SILICON (SI)  
CAS:7440-21-3  
RTECS #:VW0400000  
Minumum % Wt:3.  
Maxumum % Wt:13.  
OSHA PEL:15 MG/M3 (DUST)  
ACGIH TLV:10 MG/M3

Ingred Name:CHROMIUM (CR)  
CAS:7440-47-3  
RTECS #:GB4200000  
Minumum % Wt:.05  
Maxumum % Wt:.35  
OSHA PEL:1 MG/M3  
ACGIH TLV:0.5 MG/M3  
EPA Rpt Qty:1 LB  
DOT Rpt Qty:1 LB

Ingred Name:MANGANESE (MN)

CAS:7439-96-5

RTECS #:OO9275000

Minumum % Wt:.5

Maxumum % Wt:1.

OSHA PEL:C5 MG/M3

ACGIH TLV:5 MG/M3

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

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

Reports of Carcinogenicity:NTP:YES IARC:YES OSHA:YES

Health Hazards Acute and Chronic:COMMON ENTRY IS BY INHALATION OR THROUGH THE EYES AND SKIN. EFFECTS OF OVEREXPOSURE: INHALATION OF WELDING FUMES AND GASES CAN BE DANGEROUS TO YO

UR HEALTH. SHORT-TERM

(ACUTE) OVEREXPOSURE TO WELDING FUMES MAY RESULT IN DISCOMFORT SUCH AS DIZZINESS, NAUSEA, OR DRYNESS OR IRRITATION OF NOSE, THROAT, OR EYES. CHROMIUM (VI) COMPOUNDS IN FUME: MAY CAUSE SEVERE IRRITATION OF BRONCHIAL TUBES AND LUNGS; MAY BURN EYES; MAY CAUSE ALLERGIC REACTIONS IN SOME PEOPLE. INGESTING THIS SALT MAY CAUSE INJURY OR DEATH. BERYLLIUM IN FUME OR DUST FORM IS HIGHLY TOXIC. INHALATION OF EXCESSIVE LEVELS OF BERYLLIUM A ND (CONTD. SE

E

"TOXICOLOGICAL")

Explanation of Carcinogenicity:CHROMIUM AND BERYLLIUM COMPOUNDS ARE ON THE IARC (INTERNATIONAL AGENCY FOR RESEARCH OF CANCER) LIST AS POSING A CARCINOGENIC RISK TO HUMANS. OSHA (29 CFR 1910.1200) LISTS BERYLLIUM AND CHROMIUM AS POSSIBLE CARCINOGENS. WORKERS EXPOSED TO CHROMIUM (VI) COMPOUNDS AND BERYLLIUM HAVE A HIGHER INCIDENCE OF LUNG AND NASAL CANCERS.

Effects of Overexposure:SHORT-TERM (ACUTE) OVEREXPOSURE TO WELDING FUMES MAY RESULT IN DISCOM

FORT SUCH AS DIZZINESS, NAUSEA, OR

DRYNESS, OR IRRITATION OF NOSE, THROAT, OR EYES, IRRITATION OF BRONCHIAL TUBES AND LUNGS. INGESTING CHROMIUM (VI) SALTS: INJURY OR DEATH. CHROMIUM (VI) COMPOUNDS MAY BURN EYES, CAUSE ALLERGIC REACTIONS. INHALATION: PNEUMONITIS, SIDEROSIS, PULMONARY FUNCTION EFFECTS, ULCERATION AND PERFORATION OF NASAL SEPTUM, LIVER AND KIDNEY DAMAGE, LUNG AND NASAL CANCER, BERYLLIOSIS AND SYSTEMIC BERYLLIUM DISEASE. ARC RAYS: SKIN BURNS, EYE INJURY

. ELECTRIC SHOCK  
CAN KILL.

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

First Aid:CALL FOR MEDICAL ASSISTANCE. USE FIRST AID PROCEDURES  
RECOMMENDED BY THE AMERICAN RED CROSS. IF BREATHING IS DIFFICULT,  
GIVE OXYGEN. IF NOT BREATHING, USE CPR (CARDIOPULMONARY  
RESUSCITATION). CONSULT A PHYSICIAN IF IRRITATION OF THE EYES AND  
SKIN OR FLASH BURNS DEVELOP AFTER EXPOSURE.

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

Unusual Fire/E  
xplosion Hazard:NON-FLAMMABLE. WELDING ARC AND SPARKS CAN  
IGNITE COMBUSTIBLES.

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

Handling and Storage Precautions:READ AND UNDERSTAND MANUFACTURER'S  
INSTRUCTIONS AND PRECAUTIONARY LABEL ON THIS PRODUCT. SEE AMERICAN  
STANDARD Z49.1 SAFETY IN WELDING AND CUTTING. PUBLISHED BY THE  
AMERICAN WELDING SOCIETY, 550 N.W. LEJEUNE ROAD, MIAMI, FLORIDA  
33126 AND OSHA PUBLICATION (CONTD. SEE "OTHER PRECAUTIONS")

Other Pre  
cautions:ADVISE WELDERS TO KEEP THEIR HEADS OUT OF FUMES. USE  
PLENTY OF VENTILATION AND/OR LOCAL EXHAUST AT THE ARC. (CONTD. FROM  
HANDLING:) 2206 (29 CFR 1910), U.S. GOVERNMENT PRINTING OFFICE,  
WASHINGTON D.C . 20402 FOR MORE DETAILS ON CONTROL MEASURES AND  
PRECAUTIONS FOR SAFE HANDLING AND USE OF THIS PROD UCT.

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

Respiratory Protection:USE RESPIRABLE FUME RESPIRATOR OR AIR SUPPLIED  
RESPIRATOR WHEN WELDING I  
N A CONFINED SPACE OR GENERAL WORK AREA  
WHERE LOCAL EXHAUST AND/OR VENTILATION DOES NOT KEEP EXPOSURE BELOW  
THE THRESHOLD LIMIT BELOW THE THRESHOLD LIMIT VALUE.

Ventilation:USE ADEQUATE VENTILATION AND/OR LOCAL EXHAUST AT ARC, TO  
KEEP FUMES AND GASES BELOW THRESHOLD LIMIT VALUE WITHIN WORKER'S  
BREATHING ZONE AND GENERAL WORK AREA.

Protective Gloves:WELDER'S GLOVES.

Eye Protection:WEAR HELMET OR FACE SHIELD WITH A FILTER LENS SHADE  
NUMBER 12-14 OR DARKER.

Other Protective Equ

ipment:WELDER'S GLOVES, PROTECTIVE FACE SHIELD, ARM PROTECTORS, APRON, HATS, SHOULDER PROTECTION, AS WELL AS DARK SUBSTANTIAL CLOTHING. SHIELD OTHER WORKERS BY PROVIDING SCREENS AND FLASH GOGGLES.

Work Hygienic Practices:WELDERS SHOULD BE TRAINED NOT TO ALLOW ELECTRICALLY LIVE PARTS TO CONTACT THE SKIN OR WET CLOTHING AND GLOVES. THE WELDERS SHOULD INSULATE THEMSELVES FROM THE WORK AND GROUND.

Supplemental Safety and Health

WEAR APPROVED HEAD, HAND, BODY PROTECTION TO PREVENT INJURY FROM

RADIATION, SPARKS, ELECTRICAL SHOCK. SEE ANSI Z-79-1. (CONTD. FROM "PRODUCT NAME") MSDS COVERS PART NUMBERS: ER4043, ER5356, ER1100, ER 2319, ER4047, ER4145, ER5183, ER4643, ER5554, ER5556, ER5654, AL357, AL345.

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

HCC:N1

Appearance and Odor:EACH ELECTRODE IS STRAIGHT, 14 INCHES LONG, AND 0.188 INCHES IN DIAMETER.

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

Hazardous

Decomposition Products:REASONABLE EXPECTED FUME CONSTITUENTS OF THIS PRODUCT WOULD INCLUDE: COMPLEX OXIDES OF ALUMINUM, IRON, MANGANESE, SILICON, TITANIUM, CHROMIUM, MAGNESIUM, ZINC, BERYLIUM AND COPPER. (CONTD. SEE "SARA")

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

Toxicological Information:(CONTD FROM "HEALTH HAZARD") BERYLLIUM COMPOUNDS CAN CAUSE PNEUMONITIS (INFLAMATION OF THE LUNG TISSUES). LONG TERM (CHRONIC) OVER EXPOSURE TO WELDING FUMES CAN LEAD TO SIDEROSIS (IRON DEPOSITS IN LUN G) AND IS BELIEVED TO AFFECT PULMONARY FUNCTION. CONSTANT INHALATION OF CHROMIUM (VI) COMPOUNDS MAY CAUSE AN ULCERATION AND PERFORATION OF THE NASAL SEPTUM AS WELL AS LIVER AND KIDNEY DAMAGE. WORKERS EXPOSED TO CHROMIUM (VI) COMPOUNDS AND BERYLLIUM HAVE HIGHER INCIDENCE OF LUNG AND NASAL CANCERS. LONG-TERM EXPOSURE TO BERYLLIUM CAN CAUSE BERYLLIOSIS (PROGRESSIVE LUNG DISEASE) AND SYSTEMIC BERYLLIUM DISEASE. (CONTD. SEE "

ECOLOGICAL")

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

Ecological:(CONTD. FROM "TOXICOLOGICAL") ARC RAYS CAN INJURE EYES AND BURN SKIN. ELECTRIC SHOCK CAN KILL.

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

Waste Disposal Methods:DISCARD ANY PRODUCT, RESIDUE, DISPOSAL CONTAINER, OR LINER IN AN ENVIRONMENTALLY ACCEPTABLE MANNER APPROVED BY FEDERAL, STATE AND LOCAL REGULATIONS.

===== Regulatory Information =====  
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SARA Title III Information:(CONTD. FROM "DECOPOSITION PRODUCT")  
HAZARDOUS DECOMPOSITION PRODUCTS: WELDING FUMES AND GASES CANNOT BE CLASSIFIED SIMPLY. COMPOSITION AND QUANTITY OF THESE FUMES ANND GASES ARE DEPENDENT UPON THE M ETAL BEING WELDED, PROCEDURE FOLLOWED , AND THE ELECTRODE USED. WORKERS SHOULD BE AWARE THAT THE COMPOSITION AND QUANTITY OF FUMES AND GASES TO WHICH THEY MAY BE EXPOSED, ARE INFLUENCED BY: COATINGS S HIGH MAY BE PRESENT ON THE

METAL BEING WELDED (SUCH AS PAINT, PLATING, O GALVANIZING), NUMBER OF WELDERS IN OPERATION AND THE VOLUME OF THE WORK AREA, THE QUALITY AND (CONTD. SEE "FEDERAL REGULATOR Y")

Federal Regulatory Information:(CONTD. FROM "SARA") AMOUNT OF VENTILATION, POSITION OF WELDER'S HEAD WITH RESPECT TO THE FLUME PLUME, AS WELL AS THE PRESENCE OF CONTAMINANTS IN THE ATMOSPHERE (SUCH AS CHLORINATED HYDROCARBON VAPORS FROM CLEANING AND DEGREASING PROCEDURES). WHEN THE ELECTRODE IS C  
ONSUMED, THE FUMES

AND GAS DECOMPOSITION PRODUCTS GENERATED ARE DIFFERENT IN PERCENT AND FORM FROM THE INGREDIENTS LISTED IN THE ELECT RODE. THE COMPOSITION OF THESE FUMES AND GASES ARE TH CONCERNING MATTER AND NOT THE COMPOSITION OF THE ELECTRODE ITSELF. DECOMPOSITION PRODUCTS INCLUDE THOSE ORIGINATING FROM (CONTD. SEE "STATE")

State Regulatory Information:(CONTD. FROM "FEDERAL") THE VOLATIZATION, REACTION, OR OXIDATION OF THE ELECTRODE INGREDIENTS,PLUS THOSE FROM

THE BASE METAL, COATING, AND THE OTHER FACTORS NOTED ABOVE.  
REASONABLE EXPECTED FUME CONSTITUENTS OF THIS PRODUCT WOULD  
INCLUDE: COMPLEX OXIDES OF ALUMINUM, IRON, MANGANESE, SILICON,  
TITANIUM, CHROMIUM, MAGNESIUM, ZINC, BERYLLIUM, AND COPPER. FUME  
LIMIT FOR CR(VI) (0.05 MG/M3) MAY BE REACHED BEFORE LIMIT OF 5  
MG/M3 FOR GENERAL WELDING FUMES IS REACHED. WATCH THE CD(VI) LEVEL.  
(OTHER COMPLEX OXIDES MAY BE PRESENT WHEN USING FLUXES). GASEOUS  
REACTION PRODUCTS MAY INCLUDE (CONTD. SEE "OTHER INFO")

===== Other Information =====

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particular situation.