

SECTION 1 - PRODUCT IDENTIFICATION AND USE

PRODUCT IDENTIFIER ARCAIR® AIR CARBON ARC ELECTRODES (see below**)		CATALOG NUMBERS 20-, 22-, 24-, 35- series	
TYPICAL USE Arc metal removal			
MANUFACTURERS NAME TWECO Products, Inc.		DISTRIBUTOR NAME	
STREET ADDRESS 4200 West Harry St. P.O. Box 12250		STREET ADDRESS	
CITY Wichita	STATE Kansas	CITY	STATE
ZIP CODE 67277	EMERGENCY PHONE # (316) 942-1421	ZIP CODE	EMERGENCY PHONE #
PREPARED BY Dennis Wilson	PHONE NUMBER (316) 942-1421	DATE PREPARED October 31 1990	

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	%/RANGE	CAS NUMBER	OSHA PEL	ACGIH TLV
Carbon	20-90*	7440-44-0	3.5mg/M ³	3.5mg/M ³
Graphite, Synthetic	20-90*	7782-42-5	10mg/M ³	3.5mg/M ³
Copper	10-30	7440-50-8	0.2mg/M ³ Fume	0.2mg/M ³
(Carbon Black)	Fully Baked Out	1333-86-4	3.5mg/M ³	3.5mg/M ³

NOTE: Information for Welding Fume 5mg/M³
HEALTH AND PHYSICAL HAZARDS ASSOCIATED WITH AIR CARBON ARC ELECTRODES ARE ATTRIBUTABLE TO THE FUMES GENERATED WHEN THE ELECTRODES ARE USED AND CONSUMED.
Quantitative analysis detected no trace of cadmium or mercury.

SECTION 313. SUPPLIER INFORMATION

THIS PRODUCT DOES DOES NOT CONTAIN TOXIC CHEMICALS SUBJECT TO THE REPORTING REQUIREMENTS OF SECTION 313 OF THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT OF 1986 AND OF 40 CFR 372.

UNCLASIFIED NUMBER 10-50-8	CHEMICAL NAME Copper	% <30
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THIS INFORMATION MUST BE INCLUDED IN ALL MSDSs THAT ARE COPIED AND DISTRIBUTED FOR THIS PRODUCT.

*BATCH PERCENTAGES VARY GREATLY DEPENDING UPON AVAILABILITY.

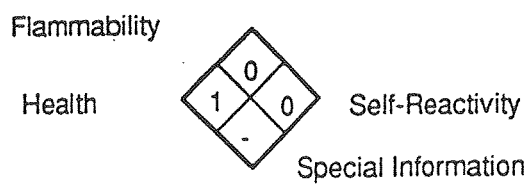
SECTION 3 - PHYSICAL DATA

PHYSICAL STATE Solid	ODOR AND APPEARANCE No notable odor, copper coated black rod			
VAPOR PRESSURE mm Hg) N.A.P.	VAPOR DENSITY (air = 1) N.A.P.	EVAPORATION RATE N.A.P.	BOILING POINT (°F/C) N.A.P.	FREEZING POINT (°F/C) N.A.P.
pH N.A.P.	SPECIFIC GRAVITY N.A.P.	SOLUBILITY Not Soluble		

SECTION 4 - FIRE AND EXPLOSION DATA

FLAMMABILITY Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> IF YES, MEANS OF EXTINCTION Not Flammable			
FLASHPOINT (°F/C) AND METHOD N.A.P.	FLAMMABLE LIMIT N.A.P.	LEL N.A.P.	UEL N.A.P.
UNUSUAL FIRE AND EXPLOSION HAZARDS None			

**Arcair® Gouging Electrodes, Copperclad®, Jetrod®
N.A.P.: NON APPLICABLE; N.A.V.: NOT AVAILABLE; N.E.S.T.: NOT ESTABLISHED
N.F.P.A. RATING SYSTEM: 0 - INSIGNIFICANT; 1 - SLIGHT; 2 - MODERATE;
3 - HIGH; 4 - EXTREME



WMIS CLASSIFICATION: CLASS "D"
DIVISION 2

DC HAZARD CLASS: NOT REQUIRED

INCOMPATIBILITY WITH OTHER SUBSTANCES Yes No IF NO, CONDITIONS TO AVOID
 HAZARDOUS POLYMERIZATION Will Occur Will Not Occur IF YES, WHICH ONES? None Known
 HAZARDOUS DECOMPOSITION PRODUCTS Welding fumes (oxides of metal being welded and gases, such as carbon monoxide, ozone and oxides of nitrogen) depending on the process, procedure and metal welded.
 Some loss of electrode will occur.

SECTION 6 - HEALTH HAZARD DATA

ROUTE OF ENTRY: SKIN CONTACT SKIN ABSORPTION EYE CONTACT INHALATION INGESTION
 Inhalation of the fumes generated during welding
 EFFECTS OF ACUTE/CHRONIC EXPOSURE TO PRODUCT
 Most studies have found tungsten to be toxicologically inert. TOXICITY: N.AP.
 REPRODUCTION: (As Tungsten) Oral Rat TDLo - 1210 ug/Kg (35w pre)

CARCINOGENICITY Not Currently Listed
 SIGNS AND SYMPTOMS OF EXPOSURE Breathing difficulty, headache, nausea, dryness or irritation or nose, throat, eyes. Burning sensation of skin or eyes. Unconsciousness.
 MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE Respiratory problems, erythmas.

EMERGENCY AND FIRST AID PROCEDURES Remove to fresh air. If breathing impaired, assisted respiration may be required. Treat U.V. exposure similar to severe sunburn, seek medical attention!

SECTION 7 - PRECAUTIONS FOR SAFE HANDLING AND USE

LEAK AND SPILL PROCEDURE N.AP.
 WASTE DISPOSAL METHOD Dispose of in accordance with local, state and federal regulations.
 PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING N.AP.
 OTHER PRECAUTIONS None

SECTION 8 - CONTROL MEASURES

RESPIRATORY PROTECTION (SPECIFY TYPE) Use a NOISH approved respirable fume respirator when welding in confined spaces and whenever fume concentrations exceed applicable limits for zirconium, tungsten or other welding fumes. All requirements set forth in 29 CFR 1910.134 should be met.

GLOVES (SPECIFY) Welders Gloves	RESPIRATOR (SPECIFY) See Above	EYE (SPECIFY) Face shield or welders helmet with proper filter lens.
FOOTWEAR (SPECIFY) Suitable for metal working	CLOTHING (SPECIFY) Dark, substantial--aprons, etc.	OTHER (SPECIFY) As recommended by ANSI Z49.1
VENTILATION: General and/or local exhaust at the welding arc recommended. If such equipment is is not available, use respirators as specified above.		SPECIAL

MECHANICAL See Above
 OTHER Air sampling if necessary to determine corrective measures

WORK/HYGIENIC PRACTICES Operator trained to avoid electrical shock and UV ray exposure.

REFERENCES:
 "Chemical Guide To OSHA Hazard Communication Standard" First Edition
 "Handbook Of Toxic And Hazardous Chemicals and Carcinogens" Second Edition
 "Registry Of Toxic Effects Of Chemical Substances"

THIS DATA IS OFFERED IN GOOD FAITH AS TYPICAL VALUES. THIS IS NEITHER AN EXPRESSED NOR IMPLIED PRODUCT SPECIFICATION. RECOMMENDED HANDLING PROCEDURES AND HYGIENE ARE BELIEVED TO BE ACCURATE, HOWEVER, THESE RECOMMENDATIONS SHOULD BE REVIEWED IN THE SPECIFIC CONTEXT OF INTENDED USE AND DETERMINED APPROPRIATE BY THE USER.