

Material Safety Data Sheet  
\*89-250-885/B\*

SECTION 1 - PRODUCT IDENTIFICATION AND USE

PRODUCT IDENTIFIER: AIR CARBON ARC ELECTRODES  
CATALOG NUMBERS: 12-033-001, 12-043-001, 12-053-001, 12-063-001  
PRODUCT USE: Arc metal removal  
MANUFACTURERS NAME: TWECO Products, Inc. EMERGENCY PHONE #: (940) 566-2000  
STREET ADDRESS: 2800 Airport Rd.  
CITY: Denton STATE: Texas ZIP CODE: 76207  
PREPARED BY: Terry Fulks PHONE NUMBER: (940) 566-2000  
DATE PREPARED: January 31, 2002 DATE REVISED: January 31, 2005

SECTION 2 - HAZARDOUS INGREDIENTS

HAZARDOUS INGREDIENTS	%/RANGE	CAS NUMBER	OSHA PEL	ACGIH TLV
Graphite, Synthetic	20-90*	7440-44-0	5mg/M3	3.5mg/M3
Graphite, Natural	20-90*	7782-42-5	15 mppcf	2.5mg/M3
Copper	10-30	7440-50-8	0.1mg/M3	0.1mg/M3(fume)

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.

Quantative 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.

CAS NUMBER	CHEMICAL NAME	%
7440-50-8	Copper	<30

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.App. VAPOR DENSITY(air=1): N.App.  
EVAPORATION RATE: N.App. BOILING POINT (F/C): N.App. FREEZING POINT (F/C): N.App.  
pH: N.App. SPECIFIC GRAVITY: N.App. SOLUBILITY: Not Soluble

SECTION 4 - FIRE AND EXPLOSION DATA

FLAMMABILITY: Yes  No  IF YES, MEANS OF EXTINCTION: Not Flammable  
FLASHPOINT (F/C) AND METHOD: N.App. FLAMMABLE LIMIT: N. App.  
LEL: N.App. UEL: N. App. UNUSUAL FIRE AND EXPLOSION HAZARDS: None

N.App.: NON APPLICABLE; N.Av.: NOT AVAILABLE; N.Est.: NOT ESTABLISHED  
N.F.P.A. RATING SYSTEM: 0 - INSIGNIFICANT; 1 - SLIGHT; 2 - MODERATE;  
3 - HIGH; 4 - EXTREME  
Health = 1 Flammability = 0 Reactivity = 0 Special = none  
WHMIS CLASSIFICATION: CLASS "D" DIVISION 2 SUB-DIVISION "B"  
DOT HAZARD CLASS: NOT REQUIRED

## SECTION 5 - REACTIVITY DATA

CHEMICAL STABILITY: Yes  No  IF NO, CONDITIONS TO AVOID: N.App.  
INCOMPATIBILITY WITH OTHER SUBSTANCES: Yes  No  IF YES, WHICH ONES?  
None known HAZARDOUS POLYMERIZATION: Will Occur  Will Not Occur   
CONDITIONS TO AVOID: N.App. HAZARDOUS DECOMPOSITION PRODUCTS: Carbon  
monoxide, carbon dioxide, traces of copper fume (ozone, nitrogen oxide from  
the electric arc and U.V. rays)

## SECTION 6 - HEALTH HAZARD DATA

ROUTE OF ENTRY: SKIN CONTACT  SKIN ABSORPTION  EYE CONTACT   
INHALATION  INGESTION  U.V. EXPOSURE

EFFECTS OF ACUTE/CHRONIC EXPOSURE TO PRODUCT: FUME: Bronchitis, lung  
deposits and tissue damage which may be irreversible. Exposure to  
ultra-violet arc rays can result in keratoconjunctivitis, causing  
inflammation, blurred vision, headache - "sunburn."  
TOXICITY: CARBON: Intravenous mouse; LD50: 440 Mg/Kg, COPPER(fume): Human,  
Oral LDLo: 120ug/Kg  
REPRODUCTION: CARBON - Subcutaneous rat; TDLo: 167Mg/Kg (8D preg); COPPER -  
Oral , Rat; TDLo: 1520ug/Kg (22w pre) TDLo: 1210ug/Kg (35w pre)\*  
CARCINOGENICITY; Not Currently Listed SIGNS AND SYMPTOMS OF EXPOSURE:  
Breathing difficulty, headache, nausea, dryness or irritation of nose,  
throat, eyes. Burning sensation of skin or eyes. Unconsciousness.  
MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE: Respiratory problems,  
erythemas. 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: Sweep or pick up. Be alert to "hot ends."  
WASTE DISPOSAL METHOD: Solid landfill if local regulations allow.  
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store in dry area.  
Electrodes exposed to moisture may explode violently if used. Dry moist rods  
by baking at 300 degrees Fahrenheit for ten hours.  
OTHER PRECAUTIONS: Read and understand "American National Standard Z49.1";  
subpart Q of OSHA 29 CFR 1910.252; "Safety in Welding and Cutting" by the  
American Welding Society. CAUTION: Use in confined areas can result in  
carbon monoxide poisoning/death. Air supplied respirator is recommended  
when used indoors.

## SECTION 8 - CONTROL MEASURES

RESPIRATORY PROTECTION: Air supplied or fume respirator should be used if  
ventilation is insufficient GLOVES: Welders RESPIRATOR: See above  
EYE: Face shield or welders helmet with #12 or darker lens FOOTWEAR: Suitable  
for metal working CLOTHING: Dark, substantial, aprons, etc. OTHER: See Z49.1  
VENTILATION: Local exhaust as required to reduce fumes generated by each  
specific application below ACGIH TLV. MECHANICAL: See Ventilation  
OTHER: Air sampling to determine corrective measures WORK/HYGIENIC PRACTICES:  
Operator trained to avoid electrical shock and U.V.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"  
"NIOSH Pocket Guide to Chemical Hazards" June 1994

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.