

*** MATERIAL SAFETY DATA SHEET ***

Version Date.....01/03/01 ER80S-D2 A=CHROMIUM & COBALT

Print Date.....04/11/02

SECTION 1 PRODUCT IDENTIFICATION

COMPANY NAME WHO SENT MSDS... HARRIS WELCO
 COMPANY ADDRESS..... 1051 YORK ROAD KINGS MOUNTAIN, NC 28086 (704) 739-6421
 EMERGENCY PHONE NUMBER..... (800)-424-9300
 MSDS VERSION NUMBER..... 2
 TRADE NAME..... ER80S-D2
 HAZARD RATING (HMIS)..... HEALTH-3 FLAMMABILTY-0 REACTIVITY-0 OTHER-2
 HMIS DESIGNATION KEY..... 4-SEVERE HAZARD 3-SERIOUS HAZARD 2-MODERATE HAZARD 1-SLIGHT HAZARD 0-MINIMAL HAZARD

SECTION 2 HAZARDOUS COMPONENTS

MATERIAL	% BY WEIGHT	CAS NUMBER	OSHA PEL	ACGIH TLV (Mg/M3)	SEC 313
IRON	90-99	7439-89-6		10 AS FE203	NA
MANGANESE	0.5-2.0	7439-96-5		1	YES
SILICON	.02-1.0	7440-21-3		3 AS SIO2	NA
MOLYBDENUM	0-1.6	7439-98-7		10	NA
VANADIUM	0-.25	7440-62-2		05 AS V2O5	YES
COBALT	0.-1.5	7440-48-4		0.1	YES
TUNGSTEN	7-10	7440-33-7		1.0	YES
CARBON	.5	7782-42-5		5.0	NA

SECTION 3 PHYSICAL PROPERTIES

BOILING POINT..... NA
 MELTING POINT..... NA
 VAPOR PRESSURE..... NA
 VAPOR DENSITY (AIR = 1)... NA
 SOLUBILITY IN WATER..... NA
 SPECIFIC GRAVITY..... NA
 EVAPORATION RATE..... NA
 APPEARANCE AND ODOR..... SOLID WIRE OR ROD - NO ODOR

SECTION 4 FIRE AND EXPLOSION DATA

FLASH POINT..... NA
 EXTINGUISHING MEDIA... NA
 SPECIAL PROCEDURES... NON FLAMMABLE. WELDING ARC AND SPARKS CAN IGNITE COMBUSTIBLES. SEE Z49.1 REFERENCED IN SECTION 8.
 UNUSUAL HAZARDS..... NO KNOWN HAZARD IF NORMAL SAFETY PRECAUTIONS.

SECTION 5 REACTIVITY DATA

STABILITY..... STABLE
 CONDITIONS TO AVOID..... NONE
 HAZARDOUS POLYMERIZATION..... NA
 INCOMPATABILITY..... NA
 HAZARDOUS DECOMPOSITION PRODUCTS... WHEN THE FILLER METAL IS CONSUMED, THE FUME AND GAS DECOMPOSITION PRODUCTS GENERATED ARE DIFFERENT IN PERCENT AND FORM FROM THE INGREDIENTS LISTED IN SECTION 2, PLUS THOSE FROM THE BASE METAL AND COATING ETC. AS NOTED ON OTHER SIDE. REASONABLY EXPECTED FUME CONSTITUENTS OF THIS PRODUCT WOULD INCLUDE OXIDES OF IRON. SECONDARY COMPLEX OXIDES OF MANGANESE, SILICON, CHROMIUM, MOLYBDENUM AND VANADIUM THE PRESENT OSHA PERMISSIBLE EXPOSURE LIMITS FOR HEXAVALENT CHROMIUM IS 0.05 MG/M3 WHICH WILL RESULT IN SIGNIFICANT REDUCTION FROM THE 5MG/M3 GENERAL FUME LEVEL. GASEOUS REACTION PRODUCTS MAY IN CLUDE

=====
SECTION 5 REACTIVITY DATA CONT'D

CARBON MONOXIDE AND CARBON DIOXIDE. OZONE AND NITROGEN OXIDES MAY BE FORMED BY THE RADIATION FROM THE ARC, IN ADDITION TO THE SHIELDING GASES LIKE ARGON AND HELIUM, WHENEVER THEY ARE EMPLOYED. ONE RECOMMEN DED WAY TO DETERMINE THE COMPOSITION AND QUANTITY OF FUMES AND GASES TO WORKERS ARE EXPOSED IS TO TAKE AN AIR SAMPLE FROM INSIDE THE WELDER'S HELMET IF WORN OR IN THE WORKER'S BREATHING ZONE. SEE AWS F1.1 AND AWS F1.2, 2985, AVAILABLE FROM THE AMERICAN WELDING SOCIETY. SEE AWS PUBLICATION "FUMES AND GASES IN THE WELDING ENVIRONMENT" HAZARDOUS POLYMERIZATION - NOT APPLICABLE.

=====
SECTION 6 HEALTH HAZARD DATA

ROUTES OF ENTRY..... INHALATION, SKIN & INGESTION.
HEALTH HAZARDS..... FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH. SHORT TERM OVEREXPOSURE MAY RESULT IN DIZZINESS, NAUSEA, OR DRYNESS OR IRRITATION OF NOSE, THROAT, & EYES. ARC RAYS CAN INJURE EYES & BURN SKIN. ELEC TRIC SHOCK CAN KILL. SEE SECTIONS 6 & 8. HEAT RAYS (INFRARED RADIATION FLAME OR HOT METAL) CAN INJURE EYES.
CARCINOGENICITY..... THE STATE OF CALIFORNIA REQUIRES THE FOLLOWING INFORMATION: WARNING: THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.
SIGNS & SYMPTOMS OF EXPOSURE..... SEE ABOVE.
MEDICAL CONDITIONS FROM EXPOSURE... SEE ABOVE.
EMERGENCY & FIRST AID..... CALL FOR MEDICAL AID. EMPLOY FIRST AID TECHNIQUES RECOMMENDED BY THE AMERICAN RED CROSS.
ADDITIONAL INFORMATION..... THRESHOLD LIMIT VALUE - THE ACGIH RECOMMENDED GENERAL LIMIT FOR WELDING FUME NOCIS 5 MG/M3. ACGIH-2981 PREFACE STATES THE TLV-TWA SHOULD BE USED AS GUIDE IN THE CONTROL OF HEALTH HAZARDS AND SHOULD NOT BE USED AS FINE LINES BETWEEN SAFE AND DANGEROUS CONCENTRATIONS. SEE SECTION 6 FOR SPECIFIC FUME CONSTITUENTS WHICH MAY MODIFY THIS TLV OF 5 MG/M3. TLV'S ARE FIGURES PUBLISHED BY THE AMERICAN CONFER ENCE OF GOVERNMENT INDUSTRIAL HYGIENISTS, PUBLICATION OFFICE, P.O. BOX 1937, CINCINNATI, OH 45201. UNITS MAY BE MILLIGRAMS PER CUBIC METER (MG/M3), MILLIONS OF PARTICLES PER CUBIC FOOT OF AIR (MPPCF) OR PARTS PER MILLION OF VAPOR OR GAS IN AIR (PPM).

=====
SECTION 7 PRECAUTIONS FOR SAFE HANDLING AND USE

SPILL AND LEAK PROCEDURES..... NA
WASTE AND DISPOSAL METHOD..... PREVENT WASTE FROM CONTAMINATING SURROUNDING ENVIRONMENT. DISCARD ANY PRODUCT RESIDUE, DISPOSABLE CONTAINER OR LINER IN AN ENVIRONMENTALLY ACCEPTABLE MANNER, IN FULL COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
HANDLING AND STORING PRECAUTIONS... NA
OTHER PRECAUTIONS..... NA

=====
SECTION 8 CONTROL MEASURES

RESPIRATORY MEASURES..... USE RESPIRABLE FUME RESPIRATOR OR AIR SUPPLIED RESPIRATOR WHEN WELDING, BRAZING, OR SOLDERING IN CONFINED SPACE OR WHERE LOCAL EXHAUST OF VENTILATION DOES NOT KEEP EXPOSURE BELOW TLV.
VENTILATION..... USE ENOUGH VENTILATION, LOCAL EXHAUST AT THE ARC (OR FLAME) OR BOTH, TO KEEP FUMES AND GASES FROM WORKER'S BREATHING ZONE AND THE GENERAL AREA. TRAIN WELDER TO KEEP HIS HEAD OUT OF THE FUMES.
PROTECTIVE GLOVES..... WELDER'S GLOVES RECOMMENDED
EYE PROTECTION..... WEAR HELMET OR USE FACE SHIELD WITH FILTER LENS. PROVIDE PROTECTIVE SCREENS AND FLASH GOGGLES, IF NECESSARY TO SHIELD OTHERS.
OTHER PROTECTIVE EQUIPMENT... WEAR HAND, HEAD, AND BOTH PROTECTION WHICH HELP TO PREVENT INJURY FROM RADIATION, SPARKS & ELECTRICAL SHOCK. TRAIN WELDER NOT TO TOUCH LIVE ELECTRICAL PARTS & INSULATE HIMSELF FROM WORK AND GROUND.
WORK/HYGIENIC PRACTICES..... FOR MAXIMUM SAFETY: BE CERTIFIED FOR, AND WEAR A RESPIRATOR AT ALL TIMES WHEN WELDING OR BRAZING.

=====
SECTION 9

DISCLAIMER

THIS DATA IS BELIEVED TO BE ACCURATE. HARRIS WEL

=====
SECTION 10

ADDITIONAL INFORMATION

NA = NOT APPLICABLE READ AND UNDERSTAND THE MANUFACTURER'S INSTRUCTIONS AND THE PRECAUTIONARY LABEL ON THE PRODUCT. SEE AMERICAN NATIONAL STANDARD Z49.1, "SAFETY IN WELDING AND CUTTING" PUBLISHED BY THE AMERICAN WELDING SOCIETY, P.O. BOX 351040, MIAMI, FL 33135 AND OSHA PUBLICATION 2206 (29CFR1910), US GOVERNMENT PRINTING OFFICE, WASHINGTON, DC 20402 FOR MORE DETAILS ON SPECIAL PROTECTION INFORMATION. CARCINOGENITY INFORMATION: CHROMIUM AND COBALT ARE REQUIRED BY OSHA TO BE CONSIDER CARCINOGENIC.

=====
SECTION 11

ADDITIONAL INFORMATION