

# FLUX-CORED STAINLESS STEEL

## MATERIAL SAFETY DATA SHEET

01/11/00

MSDS PROVIDED BY:  
**STOODY INDUSTRIAL AND WELDING SUPPLY, INC.**  
 3316 National Ave., San Diego, Ca. 92113  
 Phone: (619) 234-6750  
**MILITARY EMERGENCY RESPONSE NUMBER 1-800-851-8061**

Version Date 10/18/96 (REPRODUCED SIWS)

FLUX-CORED STAINLESS STEEL

A = NIC & CHR

**SECTION 1**

**PRODUCT IDENTIFICATION**

COMPANY NAME WHO PROVIDED MSDS .....	HARRIS WELCO. DIV. OF J.W. HARRIS CO., INC.
COMPANY ADDRESS .....	1051 YORK ROAD KINGS MOUNTAIN, NC 28086
EMERGENCY PHONE NUMBER .....	(800)-424-9300
MSDS VERSION NUMBER .....	3
TRADE NAME .....	FLUX-CORED STAINLESS STEELWIRE 308LT-1, 309LT-1 & 316LT-1
HAZARD RATING (HMIS) .....	HEALTH - 3, FLAMMABILITY - 1, 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**

<u>MATERIAL</u>	<u>% BY WEIGHT</u>	<u>CAS NUMBER</u>	<u>OSHA PEL</u>	<u>ACGIH TLV (Mg/M3)</u>	<u>SEC 313</u>
IRON	BAL	7439-89-6		NA	NA
CHROMIUM	15 - 30	7440-47-3		0.5	YES
ZIRCONIUM DIOXIDE	0 - 8	1314-23--4		NA	NA
TITANIUM DIOXIDE	0 - 15	13463-67-7		10	NA
NICKEL	8 - 15	7440-02-0		1	YES
MOLBDENUM	0 - 4	7439-98-7		10	NA
MANGANESSE	1 - 4	7439-96-5		5	NA
SILICON	.5 - 3	7440-21-3		10	NA
CALCIUM CARBONATE	0 - 5	1317-65-3		2	NA
CALCIUM FLUORIDE	0 - 2	7789-75-5		2.5	NA
MAGNESIUM OXIDE	0 - 4	1309-48-4		10	NA
POTASSIUM	0 - 4	7440-09-7		NA	NA
SODIUM	0 - 2	7440-23-5		NA	NA
SILICA	0 - 5	7631-86-9		3	NA
ALUMINA	0 - 3	1344-28-1		10	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 .....	NA

**SECTION 4**

**FIRE AND EXPLOSION DATA**

FLASH POINT .....	NA
EXTINGUISHING MEDIA .....	SEE BELOW
SPECIAL PROCEDURES .....	SEE BELOW
UNUSUAL HAZARDS .....	WELDING ARC AND SPARKS CAN IGNITE COMBUSTIBLES AND FLAMMABLES. REFER TO AMERICAN NATIONAL STANDARD Z49.1 FOR FIRE PREVENTION DURING THE USE OF WELDING AND ALLIED PROCEDURES.

**SECTION 5**

**REACTIVITY DATA**

STABILITY .....	STABLE
CONDITIONS TO AVOID .....	NONE UNLESS OTHERWISE SPECIFIED.
HAZARDOUS POLYMERIZATION .....	NA

# FLUX-CORED STAINLESS STEEL MATERIAL SAFETY DATA SHEET

INCOMPATIBILITY .....

NONE

HAZARDOUS DECOMPOSITION PRODUCTS.....

THE COMPOSITION AND QUALITY OF WELDING FUMES AND GASES ARE DEPENDENT UPON THE METAL BEING WELDED. THE PROCESS, PROCEDURE AND ELECTRODES USED. OTHER CONDITIONS WHICH ALSO INFLUENCE THE COMPOSITION AND QUANTITY OF FUMES AND GASES TO WHICH WORKERS MAY BE EXPOSED INCLUDE: COATINGS ON METAL BEING WELDED (SUCH AS PAINT, PLATING, OR GALVANIZING), THE NUMBER OF WELDERS AND VOLUME OF THE WORK AREA., THE QUALITY AND AMOUNT OF VENTILATION, THE POSITION OF WELDER'S HEAD WITH RESPECT TO FUME PLUME, AND THE PRESENCE OF CONTAMINANTS IN ATMOSPHERE (CHLORINATED HYDROCARBON VAPORS FROM CLEANING AND DEGREASING ACTIVITIES). WHEN ROD IS CONSUMED, THE FUME AND GAS DECOMPOSITION PRODUCTS GENERATED ARE DIFFERENT IN PERCENTAGE AND FORM FROM INGREDIENTS IN SECTION 2, FUME AND GAS DECOMPOSITION PRODUCTS, AND NOT INGREDIENTS IN ELECTRODE. ARE IMPORTANT. CONCENTRATION OF GIVEN FUME OR GAS COMPONENT MAY DECREASE OR INCREASE BY MANY TIME ORIGINAL CONCENTRATION. NEW COMPOUNDS IN ELECTRODE MAY FORM. DECOMPOSITION PRODUCTS OF NORMAL OPERATION INCLUDE THOSE ORIGINATING FROM VOLATILIZATION, REACTION, OR OXIDATION OF MATERIALS IN SECTION 2. PLUS THOSE FROM BASE METAL AND COATING, ETC., AS NOTED ABOVE. REASONABLY EXPECTED FUME CONSTITUENTS OF PRODUCT COULD INCLUDE PRIMARILY OXIDES OF IRON.; SECONDARILY OXIDES OF CHROMIUM, NICKEL, MANGANESE, SILICON, AND MOLYBDENUM. PRESENT OSHA EXP. LIMITS FOR HEXAVALENT – CHROMIUM IS.05 MG/M3 AND NICKEL 1MG/M3 WHICH WILL RESULT IN SIGNIFICANT REDUCTION FROM 5MG/M3 GENERAL FUME LEVEL. GASEOUS REACTION IN PRODUCTS MAY INCLUDE CARBON MONOXIDE AND CARBON DIOXIDE, OZONE AND NITROGEN OXIDES MAY BE FORMED BY THE RADIATION FROM ARC, IN ADDITION TO SHIELDING GASES LIKE ARGON AND HELIUM WHEN EMPLOYED. ONE RECOMMENDED WAY TO DETERMINE COMPOSITION AND QUANTITY OF FUMES AND GASES IS TO TAKE AIR SAMPLE FROM INSIDE WELDER'S HELMET IF WORN OR IN BREATHING ZONE. SEE AWS F1.1 AND AWS F1.2 – 1985, AVAILABLE FROM THE AMERICAN WELDING SOCIETY. SEE AWS PUBLICATION: "FUMES AND GASES IN THE WELDING ENVIRONMENT".

**SECTION 6**

**HEALTH HAZARD DATA**

ROUTES OF ENTRY .....

INHALATION, SKIN AND INGESTION.

HEALTH HAZARDS.....

ELECTRIC ARC-WELDING MAY CREATE: FUMES AND GASES CAN BE DANGEROUS, ARC RAYS CAN INJURE EYES AND BURN SKIN, ELECTRIC SHOCK CAN KILL.

CARCINOGENICITY .....

THE STATE OF CALIFORNIA REQUIRES THE FOLLOWING INFORMATION: WARNING: THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

SIGNS & SYMPTOMS OF EXPOSURE.....

SEE BELOW

MEDICAL CONDITIONS FROM EXPOSURE .....

SHORT TERM TO WELDING FUMES – DIZZINESS, NAUSEA, DRYNESS & IRRITATION OF NOSE, EYES, THROAT, CHEST TIGHTNESS, FEVER, ALLERGIC REACTION. LONG TERM – SIDEROSIS, BELIEVED TO AFFECT PULMONARY FUNCTION.

EMERGENCY & FIRST AID .....

NICKEL AND CHROMIUM COMPOUNDS ARE REQUIRED BY OSHA TO BE CONSIDERED CARCINOGENIC. REMOVE TO FRESH AIR. OBTAIN MEDICAL ATTENTION. EMPLOY FIRST AID TECHNIQUES RECOMMENDED BY AM. RED CROSS.

ADDITIONAL INFORMATION.....

NA

**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 ENVIRONMENTALLY ACCEPTABLE MANNER, IN FULL COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.

# FLUX-CORED STAINLESS STEEL MATERIAL SAFETY DATA SHEET

HANDLING AND STORING PRECAUTIONS.....	USE EXHAUST SYSTEMS. MAKE SURE INHALED AIR DOES NOT CONTAIN FUME CONSTITUENTS ABOVE PERMISSIBLE EXPOSURE LEVELS. OTHER PRECAUTIONS FOR ADDITIONAL SAFETY INFORMATION ON WELDING AND CUTTING, SEE AMERICAN STANDARD Z49-1 – 1983, SAFETY IN WELDING AND CUTTING, AND THE WELDING HANDBOOK, VOL. 1, CHAPTER 9, SAFE PRACTICES IN WELDING AND CUTTING. BOTH AVAILABLE FROM AM WELDING SOCIETY INC., 550 N.W. LEJNUE RD., PO BOX 351040, MIAMI, FL 33135. PHONE 305-443-9353.
OTHER PRECAUTIONS.....	NA

---

**SECTION 8****CONTROL MEASURES**

---

RESPIRATORY MEASURES.....	USE RESPIRABLE FUME RESPIRATORY OR AIR SUPPLIED RESPIRATOR WHEN IN CONFINED SPACE OR LOCAL EXHAUST DOES NOT KEEP EXPOSURE BELOW RECOMMENDED EXPOSURE LIMIT.
VENTILATION.....	USE ENOUGH LOCAL VENTILATION, AND LOCAL EXHAUST AT ARC TO KEEP FUMES AND GASES FROM WORKER'S BREATHING ZONE AND GENERAL AREA. TRAIN WORKER TO KEEP HEAD OUT OF FUMES.
PROTECTIVE GLOVES.....	SEE OTHER PROTECTIVE EQUIPMENT.
EYE PROTECTION.....	WEAR HELMET, FACE SHIELD WITH FILTER LENS, PROTECTIVE SCREEN, FLASH GOGGLES TO SHIELD OTHERS. START WITH SHADE TOO DARK THEN GO TO LIGHTER SHADE WHICH GIVES SUFFICIENT VIEW OF WELD ZONE.
OTHER PROTECTIVE EQUIPMENT.....	HAND, HEAD, BODY PROTECTION TO PREVENT INJURY FROM RADIATION, SPARKS AND ELECTRICAL SHOCK. DO NOT TOUCH LIVE ELECTRICAL PARTS AND INSULATE FROM WORK AND GROUND.
WORK/HYGIENIC PRACTICES.....	FOR MAXIMUM SAFETY: BE CERTIFIED FOR , AND WEAR A RESPIRATOR AT ALL TIMES WHEN WELDING AND OR BRAZING.

---

**SECTION 9****DISCLAIMER**

---

THIS DATA IS BELIEVED TO BE ACCURATE. HARRIS WELCO MAKES NO WARRANTY TO AND DISCLAIMS ALL LIABILITY FROM RELIANCE.

---

**SECTION 10****ADDITIONAL INFORMATION**

---

NA = NOT AVAILABLE

CARCINOGENIC INFORMATION: NICKEL AND CHROMIUM COMPOUNDS ARE REQUIRED BY OSHA TO BE CONSIDERED CARCINOGENIC.

---

**SECTION 11****ADDITIONAL INFORMATION**

---