



MATERIAL SAFETY DATA SHEET

STAINLESS STEEL

Specialised Welding Products Ltd

SECTION 1	PRODUCT IDENTIFICATION
COMPANY NAME WHO SENT MSDS.....	Specialised Welding Products Ltd
COMPANY ADDRESS.....	Unit 1 Farringdon Industrial Centre Farringdon, Nr Alton Hampshire, GU34 3DD
EMERGENCY PHONE NUMBER.....	
MSDS VERSION NUMBER.....	
TRADE NAME.....	STAINLESS STEEL AWS: 307Si, 308, 308L, 308H, 308LSI, 309, 309L, 309LSI, 310, 312, 314, 316, 316L, 316LSI, 317, 317L, 347, 410, 420, 320, 320LR, 330, 318Si
HAZARD RATING (HMIS).....	HEALTH-3 FLAMMABILITY-0 REACTIVITY-0 OTHER-2
HIMIS DESIGNATED 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	ACGIH TLV (Mg/M3)	SEC 313
IRON	BALANCE	7439-89-6	10 AS Fe203	NA
CHROMIUM	11.5-37.0	7440-47-3	.05 CHROMIUM VI	YES
NICKEL	.06-37.0	7440-02-0	1	YES
MANAGANESE	0.6-14.0	7439-96-5	1	YES
SILICON	.30-5.0	7440-21-3	3 AS SiO2	NA
MOLYBDENUM	.05-6.0	7439-98-7	10	NA
CARBON	0-1.0%	7440-44-0	2	NA
PHOSPHOROS	0-0.50%	7723-14-0	0.02-0.1	NA
SULPHUR	0-0.50	7704-34-9	NA	NA
NITROGEN	0-0.50	7727-37-9	NA	NA
COPPER	0-5.0	7440-50-8	1	NA
NIObIUM	0-1.0	7440-03-1	NA	NA

SECTION 3	PHYSICAL PROPERTIES
BOILING POINT.....	NA
MELTING POINT.....	NA
VAPOUR PRESSURE.....	NA
VAPOUR DENSITY (AIR=1).....	NA
SOLUBILITY IN WATER.....	NA
SPECIFIC GRAVITY.....	NA
EVAPORATION RATE.....	NA
APPEARANCE AND ODOR.....	BARE FILLER METALS ARE SOLID WIRE, SHINY SILVER OR BRIGHT STEEL APPEARANCE

SECTION 4	FIRE AND EXPLOSION DATA
FLASH POINT.....	NONFLAMMABLE
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 DURINGTHE USE OF WELDING AND ALLIED PROCEDURES

SECTION 5	REACTIVITY DATA
STABILITY.....	STABLE
CONDITIONS TO AVOID.....	NONE UNLESS OTHERWISE SPECIFIED
HAZARDOUS POLYMERIZATION.....	NA
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 MY BE EXPOSED INCLUDE: COATING OF METAL BEING WELDED (SUCH AS PAINT, PLATING, OR GALVANIZING), THE NUMBER OF WELDERS AND VOLUME OF THE WORK AEA, 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 VAPOURS FROM CLEANING AND DEGREASING ACTIVITES). WHEN ELECTRODE IS CONSUMED THE FUME AND GAS DECOMPOSITION PRODUCTS GENERATED ARE DIFFERENT IN PERCENT AND FORM 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 ARE TO TAKE AIR SAMPLE FROM INSIDE WELDER'S HELMET IF WORN OR IN BREATHING ZONE. SEE ANSI/AWS FIL-87, AVAILABLE FROM THE AMERICAN WELDING SOCIETY. SEE AWS PUBLICATION. "FUMES AND GASES IN THE WELDING ENVIRONMENT" AND AWS "EFFECTS WELDING ON HEALTH 1X."

SECTION 6 HEALTH HAZARD DATA	
ROUTES OF ENTRY.....	INHALATION, SKIN, INGESTION
HEALTH HAZARDS.....	ELECTRIC ARC-WELDING MAY CREATE: FUMES AND GASES CAN BE DANGEROUS. ARC RAYS CAN INJURE EYES AND BURN SKIN. ELECTRIC SHOCKS CAN KILL.
CARCINOGENICITY.....	THE STATE OF CALIFORNIA REQUIRES THE FOLLOING INFORMATION: WARNING: THIS PRODUCT CONTAINS CHEMICALS 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 ANAUSEA, DRYNESS & IRRITATION OF NOSE, EYES AND 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.
HANDLING AND STRONG PRECAUTIONS.....	USE EXHAUST SYSTEM. MAKE SURE INHALED AIR DOES NOT CONTAIN FUME CONSTITUENTS ABOVE PERMISSIBLE EXPOUSRE LEVELS. OTHER PERCAUTIONS 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. LEJUNE RD., PO BOX 351040, MIAMI, FL 33135. PHONE 305-443-9353.
OTHER PRECAUTIONS.....	NA
SECTION 8 CONTROL MEASURES	
RESPIRATORY MEASURES.....	USE RESPIRABLE FUME RESPIRATORY OF 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 SCREENS, 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 PRATICES.....	FOR MAXIMUM SAFTY: BE CERTIFIED FOR, AND WEAR RESPIRATOR AT ALL TIMES WHEN WELDING OR BRAZING.
SECTION 9 DISCLAIMER	
THIS DATA IS BELIEVED TO BE ACCURATE. SWP MAKES NO WARRANTY TO AND DISCLAMS ALL LIABILITY FROM RELIANCE	
SECTION 10 ADDITIONAL INFORMATION	
NA=NOT AVAILABLE CARCINOGENICITY INFORMATION: NICKEL AND CHROMIUM COMPOUNDS ARE REQUIRED BY OSHA TO BE CONSIDERED CARCINOGENIC.	