

MATERIAL SAFETY DATA SHEET

STAINLESS STEEL

SECTION 1 PRODUCT IDENTIFICATION

COMPANY NAME WHO SENT MSDS..... ANAND ARC LTD
COMPANY ADDRESS..... 701, TRADE CENTER, BANDRA KURLA COMPLEX,
BANDRA (EAST),
MUMBAI-400051. (INDIA)
EMERGENCY PHONE NUMBER..... (91-22) 42688484, 42688400.
MSDS VERSION NUMBER.....
TRADE NAME..... STAINLESS STEEL WELDING WIRE: 307Si, 308, 308L, 308H, 308LSI, 309, 309L, 309LSI,
310, 312, 314, 316, 316L, 316LSI, 317, 317L, 347, 410, 420, 430LNb,318Si
HAZARD RATING (HMIS)..... HEALTH-3
FLAMMABILITY-0
REACTIVITY-0
OTHER-2
HMIS DESIGNATED KEY..... 4-SEVERE HAZARD
3- SERIOUS HAZARD
2-MODERATE HAZARD
1-SLIGHT HAZARD
0-MINIMAL HAZARD

SECTION 2 HAZARDOUS COMPONENTS

MARERIAL	%BY WEIGHT	CAS NUMBER	ACGIH TLV (Mg/M3)	SEC 313
IRON	BALANCE	7439-89-6	10 AS Fe2O3	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
NITROGREN	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. ANAND ARC LTD 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.