***** MATERIAL SAFETY DATA SHEET *****

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ANC ER70S633236 # 11054

SECTION 1 PRODUCT IDENTIFICATION

COMPANY NAME WHO SENT MSDS.....	NASCO, INC.
COMPANY ADDRESS.....	4749 OLD HWY 8 ST. PAUL, MN 55112
COMPANY PHONE NUMBER.....	(612) 780-2000
EMERGENCY PHONE NUMBER.....	(612) 780-2000
MSDS VERSION NUMBER.....	1
TRADE NAME.....	ER70S-2,ER70S-3,ER70S-6

HAZARD RATING (HMIS).....	NA
HMIS DESIGNATION KEY.....	NA

SECTION 2 HAZARDOUS COMPONENTS

MATERIAL	PERCENT	CAS NUMBER	OSHA TLV	SEC 313
CARBON	>.50	1333-86-4	3.5MG/M3 CARBON BLACK	NA
MANGANESE	>2.50	7439-96-5	C 5MG/M3 Mn& Mn COMPOUNDS	NA
SILICON	>1.50	7440-21-3	10 MG/M3 TOTAL DUST	NA
COPPER	>.50	7440-50-8	.2 MG/M3	NA
MOLYBDENUM	>.75	7439-98-7	5 MG/M3	NA
ALUMINUM	>.50	7429-90-5	15MG/M3 AS WELD FUMES	NA
TITANIUM	>.50	7440-32-6	10MG/M3 TiO AS Ti	NA
ZIRCONIUM	>.50	744-6707	5 MG/M3 AS Zr COMPOUNDS	NA
IRON	BAL.	7439-89-6	5MG/M3 Fe2O3 Fe	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

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SECTION 4 FIRE AND EXPLOSION DATA - CONT'D

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EXTINGUISING MEDIA.....	NA
SPECIAL PROCEDURES.....	WELDING ARC ANDN SPARKS CAN IGNITE COMBUSTIBLES AND FLAMMABLES. REFER TO AM. NATIONAL STANDARD Z49.1 FOR FIRE PREVENTION DURING THE USE OF WELDING AND ALLIED PROCEDURES.
UNUSUAL HAZARDS.....	NA

SECTION 5 REACTIVITY DATA

STABILITY.....	STABLE
CONDITIONS TO AVOID.....	NONE
HAZARDOUS POLYMERIZATION.....	NA
CONDITIONS TO AVOID.....	NONE
INCOMPATABILITY.....	NONE
HAZARDOUS DECOMPOSITION PRODUCTS	THE COMPOSITION AND QUALITY OF WELDING FUMES AND GASES ARE DEPENDENT UPON METAL BEING WELDED, PROCESS, AND ELECTRODE BEING USED. OTHER FACTORS INCLUDE COATINGS ON THE METAL BEING WELDED (PAINT, PLATING OR GALVANIZING), NUMBER OF WELDERS AND VOLUME OF WORK AREA AS PRESENCE OF CONTAMINANTS IN ATMOSPHERE. WHEN ELECTRODE IS CONSUMED FUME AND GAS DECOMPOSITION PRODUCTS GENERATED ARE DIFFERENT IN PERCENT AND FORM FROM INGREDNENTS LISTED IN SECTION II. FUME AND GAS DECOMP. PRODUCTS, AND NOT INGREDIENTS IN ELECTRODE, ARE IMPORTANT. THE CONCENTRATION OF GIVEN FUME OR GAS COMPONENT MAY DECREASE OR INCREASE BY MANY TIMES ORIGINAL CONCENTRATION IN ELECTRODE NEW COMPOUNDS NOT IN ELECTRODE MAY FORM. DECOMP. PRODUCTS OF NORMAL OPERATION INCLUDE THOSE ORIGINATING FROM VOLATILIZATION, REACTION, OXIDATION OF MATERIALS IN SECTION II, PLUS THOSE FROM BASE METAL AND COATING. REASONABLY EXPECTED FUME CONSTITUENTS OF PRODUCT COULD INCLUDE PRIMARILY OXIDES OF IRON; SECONDARILY COMPLEX OXIDES OF MANGANESE & SILICON & ALUMINUM. GASEOUS REACTION PRODUCTS-CARBON MONOXIDE. CARBON DIOXDE. OZONE AND NITROGEN OXIDES MAY BE FORMED BY RADIATION FROM ARC, AND SHIELDING GASES WHEN EMPLOYED. ONE RECOMMENDED WAY TO DETERMINE COMPOSITION AND

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QUANTITY OF FUMES AND GASES TO WHICH WORKERS ARE EXPOSED IS TO TAKE AIR SAMPLE FROM INSIDE WELDERS HELMET OR IN WORKING ZONE. SEE AWS F1.1 AND AWS F1.2-1985, AVAILABLE FROM AM. WELDING SOCIETY. SEE AWS PUBLICATION: "FUMES AND GASES IN THE WELDING ENVIRONMENT".

SECTION 6 HEALTH HAZARD DATA

ROUTES OF ENTRY..... SEE BELOW

HEALTH HAZARDS..... ELECTRIC ARC WELDING MAY CREATE THE FOLLOWING: FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH. ARC RAYS CAN INJURE EYES AND BURN SKIN. ELECTRIC SHOCK CAN KILL.

CARCINOGENICITY..... NA

SIGNS & SYMPTOMS OF EXPOSURE.... SHORT TERM-DIZZINESS, NAUSEA, DRYNESS & IRRITATION OF NOSE, THROAT, EYES, CHEST TIGHTNESS, FEVER, ALLERGIC REACTION; OVER EXPOSURE TO FUMES-SIDEROSIS POSSIBLE, MAY AFFECT PULMONARY FUNCTION.

MEDICAL CONDITIONS FROM EXPOSURE SEE ABOVE

EMERGENCY & FIRST AID..... REMOVE TO FRESH AIR, OBTAIN MEDICAL ATTENTION. EMPLOY FIRST AID TECHNIQUES RECOMMENDED BY AM. RED CROSS.

ADDITIONAL INFORMATION.....

SECTION 7 PRECAUTIONS FOR SAFE HANDLING AND USE

SPILL AND LEAK PROCEDURES..... NA

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SECTION 7 PRECAUTIONS FOR SAFE HANDLING AND USE - CONT'D 11054

WASTE AND DISPOSAL METHOD.....	PREVENT WASTE FROM CONTAMINATING SURROUNDING ENVIRONMENT. DISCARD 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.....	MAKE SURE INHALED AIR DOES NOT CONTAIN FUME CONSTITUENTS ABOVE PERMISSIBLE EXPOSURE LEVELS.
VENTILATION.....	SEE ABOVE
PROTECTIVE GLOVES.....	SEE OTHER PROTECTIVE EQUIPMENT SECTION
EYE PROTECTION.....	SEE OTHER PROTECTIVE EQUIPMENT SECTION
OTHER PROTECTIVE EQUIPMENT.....	OTHER PRECAUTIONS FOR ADDITIONAL SAFETY INFORMATION ON WELDING AND CUTING, SEE AN STANDARD Z49.1-1983, SAFETY IN WELDING AN CUTTING, WELDING HANDBOOK, VOL. 1, SAFE PRACTICES IN WELDING AND CUTTING.
WORK/HYGIENIC PRACTICES.....	NA

SECTION 9 DISCLAIMER

THIS DATA IS BELIEVED TO BE ACCURATE. NASCO, INC MAKES NO WARRANTY TO AND DISCLAIMS ALL LIABILITY FROM RELIANCE.

SECTION 10 ADDITIONAL INFORMATION

NONE