

ESAB GROUP INC -- DUAL SHIELD II 110 LOW ALLOY T-1 FLUX CORED WELDING ELECTROD --
3439-00-255-8877

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===== Product Identification =====

Product ID:DUAL SHIELD II 110 LOW ALLOY T-1 FLUX CORED WELDING ELECTROD

MSDS Date:04/15/1999

FSC:3439

NIIN:00-255-8877

Status Code:A

MSDS Number: CKLBF

=== Responsible Party ===

Company Name:ESAB GROUP INC

Address:801 WILSON AVENUE

Box:517

City:HANOVER

State:PA

ZIP:

17331

Country:US

Info Phone Num:717-637-8911

Emergency Phone Num:717-637-8911

Resp. Party Other MSDS Num.:7971-2D

CAGE:84021

=== Contractor Identification ===

Company Name:ESAB GROUP INC

Address:801 WILSON AVENUE

Box:517

City:HANOVER

State:PA

ZIP:17331

Country:US

Phone:717-637-8911 OR 800-933-7070

CAGE:84021

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===== Composition/Information on Ingredients =====

Ingred Name:MANGANESE

CAS:7439-96-5

RTECS #:OO9275000

Minimum % Wt:3.

Maximum % Wt:4.

OSHA PEL:1 MG/M3 (FUME)

OSHA STEL

:3 MG/M3
ACGIH TLV:0.2 MG/M3 (FUME)
ACGIH STEL:C 5 MG/M3

Ingred Name:NICKEL
CAS:7440-02-0
RTECS #:QR5950000
Minumum % Wt:1.
Maxumum % Wt:2.
OSHA PEL:0.1 MG/M3(SOLUABLE)
ACGIH TLV:0.1 MG/M3(SOLUABLE)

Ingred Name:SODIUM TITANATE. (MANUFACTURER'S INVALID CAS NUMBER
12034-34-2)
CAS:12034-34-3
OSHA PEL:5 MG/M3 (RESP FRAC)
ACGIH TLV:10 MG/M3 (NUS PART)

Ingred Name:POTASSIUM TITANATE
CAS:12030-97-6
OSHA PEL:5 MG/M3 (RESP FRAC)
ACGIH TLV:10 MG/M3 (NUS PART)

Ingred Name:SILICON
CAS:7440-21-3
RTEC
S #:VW0400000
OSHA PEL:5 MG/M3 (RESPIRABLE)
ACGIH TLV:10 MG/M3 (DUST)

Ingred Name:SILICA, USE QUARTZ FORMULA. (SIO2)
CAS:14808-60-7
RTECS #:VV7330000
OSHA PEL:0.05 MG/M3 (RESP DST)
ACGIH TLV:0.1 MG/M3

Ingred Name:TITANIUM DIOXIDE
CAS:13463-67-7
RTECS #:XR2275000
OSHA PEL:5 MG/M3 (RESPIRABLE)
ACGIH TLV:10 MG/M3 (DUST)

Ingred Name:MAGNESIUM & MAGNESIUM OXIDE
CAS:1309-48-4
RTECS #:OM3850000
OSHA PEL:15 MG/M3 (FUME, PART)
ACGIH TLV:10 MG/M3 (OX FUME)

Ingred Name:MOLYBDENUM
CAS:7439-98-7
RTECS #:QA

4680000
OSHA PEL:5 MG/M3 (SOLUABLE)
ACGIH TLV:5 MG/M3 (SOLUABLE)

Ingred Name:IRON
CAS:7439-89-6
RTECS #:NO4565500
OSHA PEL:10 MG/M3 (TOT PART)
ACGIH TLV:5 MG/M3 (OX FUME)

===== Hazards Identification =====

Routes of Entry: Inhalation:YES Skin:YES Ingestion:YES
Reports of Carcinogenicity:NTP:YES IARC:YES OSHA:NO
Health Hazards Acute and Chronic:ACUTE OVEREXP TO GASES, FUMES & DUSTS
MAY INCL IRRIT OF EYES, LUNGS, NOSE & THROAT. SOME TOX GASES ASSOC

W/WELDING MAY CAUSE PULM EDEMA, ASPHY & DEATH. ACUTE OVEREXP MAY INCL SIGNS & SYMPS SUCH AS WAT ERY EYES, NOSE & THROAT IRRIT, HDCH, DIZZ, DFCLTY BRTHG, FREQUENT COUGH OR CHEST PAIN. PRESENCE OF NICKEL CMPDS IN FUME CAN CAUSE METALLIC TASTE, NAUS, TIGHTNESS OF CHEST, FEVER & ALLERGIC RXN. CHRONI C OVEREXP TO AIR CONTAMINANTS MAY LEAD TO THEIR ACCUM IN LUNGS, CNDTN WHICH MAY BE SEEN AS DENSE AREAS ON CHEST X-RAYS. SEVERITY OF CHG IS PROPORTIONAL TO LENGTH OF EXPOS.

CHGS SEEN ARE NOT NECESSARIL Y (EFTS OF OVEREXP)

Explanation of Carcinogenicity:NICKEL: GROUP 2B, IARC MONOGRAPHS VOL 49, P 257, 1990; ANTIC HUMAN CARCIN, NTP 8TH ANNUAL RPT ON CARCINS, 1998. CRYSTALLINE SILICA-QUARTZ: GROUP 1, IARC MONOGRAPHS VOL 68, P 41, 1997; ANTIC HUMAN CARC IN, NTP 8TH ANNUAL RPT ON CARCINS, 1998.

Effects of Overexposure:HLTH HAZS: ASSOC W/SYMPS OR SIGNS OF REDUCED LUNG FUNC/DISEASE. IN ADDN, CHGS ON X-RAYS MAY BE CAUSED BY NON-WORK FACTORS SUCH AS SMKN

G, ETC. NICKEL IS CONSIDERED CARCIN.

LONG TERM OVEREXP TO NICKEL F UMES MAY ALSO CAUSE PULM FIBROSIS & EDEMA. OVEREXP TO MANGANESE CMPDS MAY AFFECT CNS, W/SYMPS OF LANGUOR, SLEEPINESS, MUSC WEAK, EMOTIONAL DISTURBS & SPASTIC GAIT. EXPOS LIMS FOR INGREDIENTS ARE LISTED IN SECTION II. 1989 OSHA TWA FOR WELDING FUME IS 5 MG/M3. TLV-TWAS SHOULD BE USED AS GUIDE IN CTL OF HLTH HAZS & NOT AS FINE LINES BETWEEN SAFE & EXCESSIVE CONCS. WHEN PRODS USED AS RECOM BY ESAB GROUP, & P

REVENTIVE MEASURES TAUGHT

(SUPDAT)

Medical Cond Aggravated by Exposure:INDIVIDUALS W/ALLERGIES OR IMPAIRED RESP FUNC MAY HAVE SYMPS WORSENERD BY EXPOS TO WELDING FUMES; HOWEVER, SUCH REACTION CANNOT BE PREDICTED DUE TO VARIATION IN COMPOSITION & QTY OF DECOMP PRODS.

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===== First Aid Measures =====

First Aid:INGESTION: CALL MD IMMEDIATELY . EYES: IMMEDIATELY FLUSH EYES WITH POTABLE WATER FOR AT LEAST 15 MINUTES. SEEK ASSISTANCE FROM MD

. SKIN: FLUSH WITH COPIOUS AMOUNTS OF WATER. CALL MD (FP N). IN CASE OF EMERGENCY, CALL FOR MEDICAL AID. EMPLOY FIRST AID TECHNIQUE RECOMMENDED BY RED CROSS. INHALATION: IF BREATHING IS DIFFICULT, GIVE OXYGEN AND CALL FOR MD. FOR ELECTRIC SHOCK, DISCONNECT A ND TURN OFF THE POWER. IF NOT BREATHING, BEGIN ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF NO DETECTABLE PULSE, BEGIN CPR. IMMEDIATELY CALL MD. FOR ARC BURN, APPLY COLD, CLEAN COMPRESSES & C ALL MD.

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===== Fire Fighting Measures =====

Extinguishing Media:THIS PROD WILL NOT BURN; HOWEVER, WELDING ARCS & SPKS CAN IGNITE COMBUST & FLAM MATLS. USE EXTING MEDIA RECOM FOR BURNING MATLS & FIRE SITUATION. SEE ANSI Z49.1 (TOXICOLOGICAL INFO)

Fire Fighting Procedures:USE NIOSH APPROVED SCBA AND FULL PROTECTIVE EQUIPMENT .

Unusual Fire/Explosion Hazard:FLAMMABLE/EXPLOSIVE: NO. ONLY THE PACKAGING FOR THIS PRODUCT WILL BURN.

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===== Accidenta

I Release Measures =====

Spill Release Procedures:NOT APPLICABLE.

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===== Handling and Storage =====

Handling and Storage Precautions:READ & UNDERSTAND MFR'S INSTRUCTION & PREC LABEL ON PROD. SEE ANSI Z-49.1, "SFTY IN WELDING & CUTTING," PUB BY AMERICAN WELDING SOCIETY, BOX 351040, MIAMI, FL 33135 & OSHA PUB 2206 (29 CFR 1910), US G OVT PRINTING OFFICE, SUPERINTENDENT OF DOCUMENTS, BOX 371954, PITTSBURGH, PA 15250 FOR MORE DETAILS

Other Precautions:ESAB GROUP REQUESTS USERS OF PRODS STUDY MSDS & BECOME AWARE OF HAZS & SFTY INFO. TO PROMOTE SAFE USE OF PRODS, USER SHOULD 1)NOTIFY EMPLOYEES, AGENTS & CONTRACTORS OF INFO ON MSDS & ANY PROD HAZS & SFTY INFO, 2)FURNISH SAME INFO TO CUSTOMERS FOR THESE PRODS & 3)REQUEST SUCH CUSTOMERS NOTIFY THEIR (STAB COND TO AVOID)

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===== Exposure Controls/Personal Protection =====

Respiratory Protection:USE NIOSH APPROVED RESPIRABLE FUME RESPIRATOR OR

AIR SUPPLIED RESPIRATOR WHEN WELDING IN CONFINED SPACE OR WHERE LOCAL EXHAUST OR VENTILATION DOES NOT KEEP EXPOSURE BELOW TLV.

Ventilation:USE ENOUGH VENT, LOCAL EXHAUST AT ARC OR BOTH, TO KEEP FUMES & GASES BELOW TLVS IN WORKER'S BRTHG ZONE & GEN AREA. TRAIN WELDER TO KEEP HIS HEAD OUT OF FUMES.

Protective Gloves:WELDER'S GLOVES.

Eye Protection:ANSI APPRVD CHEM WORKERS GOGGS & FULL LENGTH FSHLD . (TOXICOLOGICAL INFO)

Other Protective Equipment:ANSI APPRVD EYE WASH & DELUGE SHOWER . WEAR

HEAD, HAND & BODY PROT WHICH HELP TO PVNT INJURY FROM RADIA, SPKS & ELEC SHOCK. SEE ANSI Z-49.1. AT MINIMUM, INCLS WELDER'S GLOVES (TOXICOLOGICAL INFO)

Work Hygienic Practices:TRAIN THE WELDER NOT TO TOUCH LIVE ELECTRICAL PARTS AND TO INSULATE HIMSELF FROM WORK AND GROUND.

Supplemental Safety and Health

EFTS OF OVEREXP: IN MSDS ARE FOLLOWED, OVEREXP TO HAZ SUBSTANCES WILL NOT OCCUR. ELEC ARC WORKING MAY CREATE ONE/MORE OF FOLLOWING HLTH OR PHYSICAL HAZS.

FUMES & GASES CAN BE DANGEROUS TO HLTH. ELEC S

HOCK CAN KILL. ARC RAYS CAN INJURE EYES & BURN SKIN. NOISE (OTHER INFO)

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===== Physical/Chemical Properties =====

Appearance and Odor:TUBULAR STEEL WIRE CONTAINING MINERALS AND ALLOYS; ODORLESS.

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===== Stability and Reactivity Data =====

Stability Indicator/Materials to Avoid:YES

NONE CURRENTLY KNOWN.

Stability Condition to Avoid:N/P. OTHER PREC: EMPLOYEES AND CUSTOMERS, FOR T

HESE PRODUCTS, OF THE SAME PRODUCT HAZARDS AND SAFETY INFORMATION.

Hazardous Decomposition Products:WELDING FUMES & GASES CANNOT BE CLASSIFIED SIMPLY. COMPOSITION & QTY OF BOTH DEPEND ON MATL BEING WORKED, PROCESS, PROCS & CONSUMABLES USED. OTHER CNDTNS INFLUENCING COMPOSITION & QTY OF (ECOL INFO)

===== Toxicological Information =====

Toxicological Information:N/P. EXTING MEDIA:"SFTY IN WELDING & CUTTING" & SAFE PRACTICES" CODE: SP, PUB BY AWS &

NFPA 51B "CUTTING & WELDING PROCESSES, PUB BY NFPA, BATTERYMARCH PARK, QUINCY, MA 02269 FOR ADDNL FIRE PREVENTION & PROT INFO. EYE PROT: USE FILTER LENS. AS RULE OF THUMB, START W/SHADE WHICH IS TOO DARK TO SEE WELD ZONE. THEN GO TO NEXT LIGHTER SHADE WHICH GIVES SUFFICIENT VIEW OF WELD ZONE. PROVIDE PROT SCREEN S & FLASH GOGGS, IF NEC, TO SHIELD OTHERS. OTHER PROT EQUIP: & PROT FSHLD & MAY INCL ARM PROTECTORS, APRONS, HAT, SHOULDER PROTECTION AS WELL AS DARK SUBSTA NTIAL CLTHG.

===== Ecological Information =====

Ecological:N/P. PHYSICAL DATA: AS SHIPPED, THESE PRODS ARE NONFLAMMABLE, NON-EXPLOSIVE, NON-REACTIVE & NON-HAZARDOUS. PHYSICAL STATE: SOLID. HAZ DECOMP PRODS: FUMES & GASES TO WHICH WORKERS MAY BE EXPOSED INCL: COATINGS ON MATL BEING WORKED (SUCH AS PAINT, PLATING OR GALVANIZING), NUMBER OF WELDING OPERATIONS & VOL OF WORK AREA, QUALITY & AMT OF VENT, POSITION OF WORKER'S HEAD W/RESPECT TO

FUME PLUME, AS WEL L AS PRESENCE OF CONTAMINANTS IN ATM (SUCH AS CHLORINATED HYDROCARB VAPS FROM CLEANING OR PAINTING ACTIVITIES). WHEN MATLS CONSUMED, FUME & GAS DECOMP PRODS GENERATED ARE DIFFERENT IN PERCENT & FORM F ROM INGREDIENTS LISTED IN (TRANSPORT INFO)

===== Disposal Considerations =====

Waste Disposal Methods:PREVENT WASTE FROM CONTAMINATING SURROUNDING ENVIRONMENT. DISCARD ANY PRODUCT, RESIDUE, DISPOSABLE CONTAINER OR LINER IN A

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

===== MSDS Transport Information =====

Transport Information:N/P. ECOLOGICAL INFO: SECTION II. DECOMP PRODS OF NORMAL OPERATION INCL THOSE ORIGINATING FROM VOLATILIZATION, RXN OR OXIDATION OF INGREDIENTS, PLUS THOSE FROM MATERIAL BEING WORKED & COATINGS ETC, NOTED ABOVE. REASONABLY EXPECTED DECOMP PRODS FROM NORMAL USE OF THESE PRODUCTS INCL COMPLEX OXIDES & FLUORIDES OF MATERIALS LISTED, AS WELL AS CARBON MONOXIDE, CARBON DIOXIDE, OZONE & NITROGEN OXIDES (REFER TO "CHARACTERIZATION OF ARC WELDING FUME" AVAILABLE FROM AWS). TLV FOR MANGANESE (0.2 MG/M3) WILL BE REACHED BEFORE GEN LIMIT FOR WELDING FUMES OF 5 MG/M3 IS REACHED. ONLY WAY TO DETERMINE TRUE IDENTITY OF DECOMP PRODUCTS IS BY (SARA REG INFO)

===== Regulatory Information =====

SARA Title III Information:MANGANESE & NICKEL ARE TOXIC CHEMICALS SUBJECT TO REPORTING REQUIREMENTS OF SECTION 313 OF EMERGENCY PLANNING & COMMUNITY RIGHT-TO-KNOW ACT OF 1986 (SARA) & 40 CFR 372. TRANSPORT INFO: SAMPLING & ANALYSIS. COMPOSITION & QUANTITY OF FUMES & GASES TO WHICH WORKER MAY BE OVEREXPOSED CAN BE DETERMINED FROM SAMPLE OBTAINED FROM INSIDE WELDER'S HELMET, IF WORN, OR IN WORKER'S BREATHING ZONE. SEE ANSI/AWS F1.1 "METHOD FOR SAMPLING AIRBORNE PARTICLES GENERATED BY WELDING & ALLIED PROCESSES," AVAILABLE FROM AMERICAN WELDING SOCIETY.

Federal Regulatory Information:N/P. HAZARDOUS INGREDIENTS LISTED IN SECTION II, COVERS MATERIALS FROM WHICH PRODUCT IS MANUFACTURED. FUMES & GASES PRODUCED DURING NORMAL USE OF THESE PRODUCTS ARE COVERED IN REACTIVITY DATA SECTION. TERM HAZARDOUS SHOULD BE INTERPRETED AS TERM REQUIRED & DEFINED BY LAWS, STATUTES OR REGULATIONS & DOES NOT NECESSARILY IMPLY THE EXISTENCE OF ANY HAZARD WHEN THE PRODUCTS ARE USED AS DIRECTED BY THE ESAB GROUP.

State Regulatory Information:WARNING: THIS PRODUCT CONTAINS OR PRODUCES A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS (OR OTHER REPRODUCTIVE HARM) (CALIFORNIA HEALTH & SAFETY CODE 25249.5 ET SEQ.).

===== Other Information =====

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