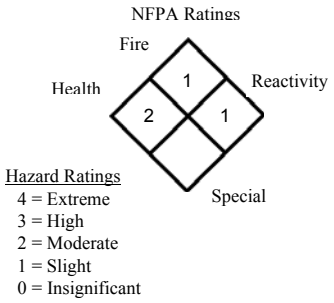

FORM NO. MSDS #75-A
DATE ISSUED: 05/02/2002

Material Safety Data Sheet

(Essentially Similar to U.S. Department of Labor Suggested Form For Hazard Communication Compliance)

I. Product Identification

Product Type - ALL-STATE SOLDER PASTE SYRINGES

Manufacturer - THE ESAB GROUP, INC.
Website: www.esabna.com

Address - 801 Wilson Avenue
Hanover, PA 17331

Telephone No. - 1-717-637-8911
1-800-933-7070

Emergency No. - 1-717-637-8911
(CHEMTREC) 1-800-424-9300

APPROXIMATE COMPOSITION

All-State Product Trade Name	STRONGSET® Silver Solder Paste ❶	STRONGSET® Copper Solder Paste ❶	STRONGSET® Aluminum Solder Paste ❶	STRONGSET® Pot Metal Solder Paste❶
% Tin	<80	<80	<80	<80
% Silver	<5	<5	<5	<6
% Bismuth	<5	<5	<5	<4
% Petrolatum	<29	<29	<29	<29
% Glycerine	<6	<6	<6	<6
% Zinc Chloride	<2	<2	<2	<2
% Ammonium Fluoborate	--	--	<9	<8
% Aminoethyl-ethanolamine	--	--	<9	<9
% Zinc Oxide	--	--	<7	<8

❶ See Note In Section VI.

THE ESAB GROUP requests the users of these products to study this Material Safety Data Sheet (MSDS) and the product labels and become fully aware of the product hazards and safety information. To promote the safe use of these products a user should (1) notify and train its employees, agents and contractors concerning the information on this MSDS and any product hazards and safety information, (2) furnish this same information to each of its customers for these products, and (3) request that such customers notify and train their employees and customers, for these products, of the same product hazards and safety information.

II. Hazardous Ingredients

IMPORTANT: This section covers the materials from which this product is manufactured. The fumes and gases produced during normal use of these products are covered in Section V. The term **HAZARDOUS** should be interpreted as a term required and defined by Laws, Statutes or Regulations, and does not necessarily imply the existence of any hazard when the products are used as directed by **THE ESAB GROUP**.

Material	(CAS No.)	SARA	ACGIH TLV (2001) TWA (mg/m^3)	ACGIH TLV (2001) STEL (mg/m^3)	OSHA - PEL (1993) TWA (mg/m^3)	OSHA - PEL (1993) STEL (mg/m^3)
Aminoethylethanolamine	(111-41-1)		Not Listed		Not Listed	--
Ammonium Fluoborate	(13826-83-0)		2.5 (as F)		2.5 (as F)	--
Bismuth	(7440-69-9)		Not Listed		Not Listed	--
Glycerine	(56-81-5)		10 ppm (Mists)		15 (Total Dust) **	--
Petrolatum	(8009-03-08)		Not Listed		Not Listed	--
Silver	(7440-22-4)	*	0.1 (Metal) 0.01 (Soluble Compounds)		0.01 (Metal) 0.01 (Soluble Compounds)	--
Tin	(7440-31-5)		2		2	--
Zinc Chloride	(7646-85-7)	*	1 (Fume)	2 (STEL)	1 (Fume)	2.0
Zinc Oxide	(1314-13-2)		5 (Fume)	10 (Fume)	5 (Fume)	--

NOTE: In the ingredients table, an asterisk (*) after the CAS number indicates a toxic chemical subject to the reporting requirements of Section 313 of the Emergency Planning and Community Right-To-Know Act of 1986 (SARA) and 40 CFR Part 372.

In the ingredients table, a double asterisk (**) indicates this item has a respirable fraction limit for OSHA of 5 mg/m^3.

III. Physical Data

Physical State: Gas ( ) Liquid ( ) Solid (X)

Solubility in Water: Less than 2% for all products.

Odor and Appearance: Gray paste with bland odor for all products.

	STRONGSET® Silver Solder Paste	STRONGSET® Copper Solder Paste	STRONGSET® Aluminum Solder Paste	STRONGSET® Pot Metal Solder Paste
Melting Point, °F:	132	132	132	132
Specific Gravity (H_2O = 1):	2.4	2.42	2.66	6.1
Evaporation Rate: (butyl acetate = 1)	Nil	Nil	Nil	Nil
Vapor Pressure: (mm Hg)	Nil	Nil	Nil	Nil

IV. Fire & Explosion Hazard

Flash Point (Method Used): 400°F (OC)

Flammable Limits in Air: (% by Volume) LEL: N/A UEL: N/A

Extinguishing Media: Dry chemical, alcohol foam, or carbon dioxide.

Unusual Fire and Explosion Hazards: Heated containers may rupture violently. Cool with a water mist to prevent overheating.

Special Fire Fighting Procedures: Product exposed to high temperatures may produce toxic fumes. Firefighters should wear self-contained breathing apparatus and full protective gear.

See ANSI Z49.1 "Safety in Welding and Cutting" and "Safe Practices" Code: SP, published by the American Welding Society, P. O. Box 351040, Miami, FL 33135, and NFPA 51B "Cutting and Welding Processes," published by the National Fire Protection Association, Batterymarch Park, Quincy, MA 02269 for additional fire prevention and protection information.

V. Reactivity Data

Stability: Stable (X) Unstable ( ) Polymerization will not occur.

Incompatibility (Materials to Avoid): Avoid flames. Do not mix with acids, oxidizing agents, sulfur or chlorine.

Hazardous Decomposition Products: Welding/brazing fumes and gases cannot be classified simply. The composition and quantity of both are dependent upon the material being worked, the process, procedures and consumables used. Other conditions which also influence the composition and quantity of the fumes and gases to which workers may be exposed include: coatings on the material being worked (such as paint, plating or galvanizing), the number of welding operations and the volume of the work area, the quality and amount of ventilation, the position of the workers head with respect to the fume plume, as well as the presence of contaminants in the atmosphere (such as chlorinated hydrocarbon vapors from cleaning or painting activities). When the materials are consumed, the fume and gas decomposition products generated are different in percent and form from the ingredients listed in Section II. Decomposition products of normal operation include those originating from the volatilization, reaction or oxidation of the ingredients, plus those from the material being worked and the coatings etc. noted above.

Reasonably Expected Decomposition Products: From normal use of these products include a complex of the oxides and fluorides of the materials listed in Section II, as well as carbon monoxide, carbon dioxide, ozone and nitrogen oxides (refer to "Characterization of Arc Welding Fume" available from the American Welding Society). Exposure to strong acids can produce toxic organic and inorganic tin and silver compounds. Acrolein. The only way to determine the true identity of the decomposition products is by sampling and analysis. The composition and quantity of the fumes and gases to which a worker may be overexposed can be determined from a sample obtained from inside the welder's helmet, if worn, or in the workers breathing zone. See ANSI/AWS F1.1 "Method for Sampling Airborne Particles Generated by Welding and Allied Processes", available from the American Welding Society.

VI. Physical and Health Hazard Data

Route of overexposure: The primary route of entry of the decomposition products is by inhalation. Skin contact, eye contact, and ingestion are possible. When these products are used as recommended by **THE ESAB GROUP**, and ventilation maintains exposure to the decomposition products below the limits recommended, overexposure is unlikely.

Effects of acute (short-term) overexposure: Some toxic gases associated with welding/brazing may cause pulmonary edema, asphyxiation, and death. Acute overexposure may include signs and symptoms such as watery eyes, nose and throat irritation, headache, dizziness, difficulty in breathing, frequent coughing, or chest pain. Acute effects of this product are:

Inhalation: Irritation to respiratory system. Existing lung disorders will be aggravated.

Eye Contact: Irritation to eyes, tearing, burn of eye surfaces, corrosive to eyes.

Skin Contact: May be irritating to skin. Existing disorders will be aggravated.

Ingestion: May result in irritation to digestive system.

Pre-existing Medical Conditions Aggravated by Overexposure: Individuals with allergies or impaired respiratory function may have symptoms worsened by exposure to welding fumes. However, such reaction cannot be predicted due to the variation in composition and quantity of the decomposition products. These products may cause aggravation to pre-existing skin, lung, and eye disorders.

Effects of chronic (long-term) overexposure: Dermatitis and contact burns to skin, eyes and respiratory system. On rare occasions, after prolonged or repeated exposure to mists of petrolatum, some individuals may experience shortness of breath and cough.

Exposure limits for the ingredients are listed in Section II. The 1989 OSHA TWA for welding fume is 5 mg/m³. TLV-TWAs should be used as a guide in the control of health hazards and not as fine lines between safe and excessive concentrations. When these products are used as recommended by **THE ESAB GROUP**, and the preventive measures taught in this MSDS are followed, overexposure to hazardous substances will not occur.

Emergency First Aid Measures: In case of emergency**,** call for medical aid.

Eye Contact: Flush eyes with water for at least fifteen minutes, lifting upper and lower lids, to remove all residue. Get medical help **IMMEDIATELY!!**

Skin Contact: Promptly flush skin with water for at least fifteen minutes to remove all residue. If rash or burn develops, consult a physician.

Inhalation: Remove to fresh air. If breathing has stopped, administer artificial respiration. Get medical help **IMMEDIATELY!!**

Ingestion: Do not induce vomiting. Call a physician at once or your Poison Control Center. Advise of Section II and III.

Carcinogenic Assessment (NTP Annual Report, IARC Monographs, Other): NONE

WARNING: This product, when used for welding or cutting, produces fumes or gases which contain chemicals known to the State of California to cause birth defects and, in some cases, cancer. (California Health & Safety Code §25249.5 et seq.)

VII. Precautions for Safe Handling and Use/Applicable Control Measures

Read and understand the manufacturer's instructions and the precautionary label on this product. See American National Standard Z-49.1, "Safety in Welding and Cutting," published by the American Welding Society, P. O. Box 351040, Miami, FL 33135 and OSHA Publication 2206 (29 C.F.R. 1910), U.S. Government Printing Office, Washington, D.C. 20402 for more detail on many of the following:

Respiratory Protection: Use NIOSH/MSHA approved respirators or air supplied respirator when soldering in a confined space or where local exhaust or ventilation does not keep exposure below TLV..

Ventilation: Maintain air flow away from user to remove all fumes, vapors, and dusts, so that PEL/TLV is never exceeded. Adhere to environmental regulation for exhausts. Local exhaust is recommended.

Eye Protection: Chemical tight safety goggles. Do NOT wear contact lenses.

Protective Gloves: Rubber or neoprene gloves.

Protective Clothing and Equipment. Wear full protective equipment normally used in a brazing/welding operation so as to prevent any contact. Review operations to avoid contact with hazardous gas, liquids or solids. See also 29 CFR 1910.132 – 29 CFR 1910.140 (Personal Protective Equipment) and 29 CFR 1910.251 – 29 CFR 1910.257 (Welding, Cutting and Brazing).

Hygienic Work Practices: Wash hands thoroughly after handling to remove all residue. Remove and professionally wash contaminated clothing before re-use.

Steps to be taken if material is spilled or released: Absorb on inert material such as clay, vermiculite, or sand. Place in sealable container for disposal as a hazardous waste.

Waste Disposal Method: Dispose of in accordance with federal, state and local regulations.

Precautions to be Taken in Handling and Storage: Store away from sources of heat, spark and flame. Do not store with or near acids or oxidizing materials.

Other Precautions and/or Special Hazards: Do Not Breathe Fumes. Professionally wash contaminated clothing before re-use. Existing lung disorders will have increased toxic susceptibility.

Additional Information: Emptied container contains product residue. Observe all precautions, even after container is emptied. Keep container tightly closed.

The opinions expressed in this MSDS are those of qualified experts within **THE ESAB GROUP**. We believe that the information contained herein is current as of the date of this MSDS. Since the use of this information and these opinions and the conditions of use of these products are not within the control of **THE ESAB GROUP**, it is the user's obligation to determine the conditions of safe use of these products.