



# Material Safety Data Sheet

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

Hazard Ratings  
 4 = Extreme  
 3 = High  
 2 = Moderate  
 1 = Slight  
 0 = Insignificant

## I. Product Identification

**Product Type** - ALL-STATE LOW TEMPERATURE SOLDERS

**Manufacturer** - THE ESAB GROUP, INC.

**Telephone No.** - 1-717-637-8911

**Website:** [www.esabna.com](http://www.esabna.com)

1-800-933-7070

**Address** - 801 Wilson Avenue  
 Hanover, PA 17331

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

**Product Description:** All-State No. 7 is rod cut in standard lengths for use on cast iron. All-State Gallover is a low-melting square shaped metal rod cut in standard lengths intended to restore corrosion resistance to damaged areas of galvanized mild steel.

### APPROXIMATE COMPOSITION (Wt. %)

All-State Product Trade Name	% Lead	% Zinc	Tin
All-State Gallover® ③	40-55	10-25	X

**NOTE:** X indicates material is present

③ 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		OSHA - PEL	STEL (mg/m <sup>3</sup> )
			TWA (mg/m <sup>3</sup> )	TWA (mg/m <sup>3</sup> )		
Lead	(7439-92-1)	*	0.05 (Fumes & Dust)		0.05 **	--
Tin	(7440-31-5)		2		2	--
Zinc	(7440-66-6)	*	5 (Oxide Fume),	10 (STEL)	5 (Respirable)	10

**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.

\*\*Exposure should not be greater than 50 micrograms/m<sup>3</sup> of air averaged over an 8-hour period.

**WARNING: LEAD POISONING HAZARD.** Read and comply with OSHA 29 CFR 1910.1025! The use of this solder to make joints or fittings in any private or public potable water system is **PROHIBITED**.

## III. Physical Data

As shipped, these products are nonflammable, nonexplosive, nonreactive, and nonhazardous

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

**Boiling Point:** Not established

**Melting Point:** 350 – 550°F

**Solubility in Water:** Insoluble

**Specific Gravity** (H<sub>2</sub>O = 1): 0.3351

**Odor and Appearance:** Silver color. Odorless.

## IV. Fire & Explosion Hazard

**Flammable/Explosive** NO (X) YES ( )

**Extinguishing Media:** Use CO<sub>2</sub> or dry chemical on surrounding fire. Do not use water on fire where molten metal is present.

**Special Fire Fighting Procedures:** Use NIOSH/MSHA approved self-contained breathing apparatus and full body protective clothing if involved in fire.

**Unusual Fire and Explosion Hazards:** Metal products are not a fire hazard. However finely divided dust may form explosive mixture with air. NEVER DROP WATER OR LIQUIDS INTO MOLTEN SOLDER. Do not plunge damp or wet solder bars/pieces into molten solder.

NOTE: When overheated, lead fumes are toxic. Never exceed 500°C.

## V. Reactivity Data

**Stability:** Stable (X)    Unstable ( )    Hazardous polymerization will not occur.

**Incompatibility** (Materials to Avoid):    Strong acids/alkalis and ammonia.

**Hazardous Decomposition Products:** Brazing and soldering 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 other welding and allied 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 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). Follow the guidelines of the OSHA Lead Standard (see 29 CFR 1910.1025). THE FUME LIMIT FOR LEAD MAY BE REACHED BEFORE THE GENERAL LIMIT FOR WELDING FUMES OF 5 mg/m<sup>3</sup> IS REACHED. MONITOR THE FUME FOR LEAD LEVELS 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

Electric arc working and gas torch joining may create one or more of the following health or physical hazards. Fumes and gases can be dangerous to your health. Electric shock can kill you. Arc rays can injure eyes and burn skin. Noise can damage hearing. An additional detailed description of the Health and Physical Hazards and their consequences may be found in ESAB's free publications F52-529 "Precautions and Safe Practices for Electric Welding and Cutting" and 17982 "Standard for Fire Prevention During Welding, Cutting and Other Hot Work." You may obtain copies from your local supplier or by writing to the address in Section I. Brazing and soldering alloys are frequently used with a flux. If applicable, the flux fume should be considered in the evaluation of hazards.

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

**Effects of acute (short-term) overexposure** to the gases, fumes and dusts may include irritation of the eyes, lungs, nose and throat. Some toxic gases associated with welding and allied processes 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. The presence of zinc in fume can cause metal fume fever. Short term symptoms may include a metallic taste in the mouth, dryness or irritation of the throat followed by coughing, shortness of breath, nausea, fever, body ache, and chills. Excessive inhalation of zinc fumes may cause zinc shakes, an acute, self-limiting condition without recognized complications. Symptoms usually disappear in 24 hours.

**Pre-existing Medical Conditions Aggravated by Overexposure:** Kidney and blood diseases. Individuals with allergies or impaired respiratory function may have symptoms worsened by exposure to brazing fumes. However, such reaction cannot be predicted due to the variation in composition and quantity of the decomposition products.

**Effects of chronic (long-term) overexposure** to air contaminants may lead to their accumulation in the lungs, a condition which may be seen as dense areas on chest X-rays. The severity of the change is proportional to the length of the exposure. The changes seen are not necessarily associated with symptoms or signs of reduced lung function or disease. In addition, the changes on X-rays may be caused by non-work factors such as smoking, etc. Long term exposure to brazing fume, gases or dust may contribute to pulmonary irritation or pneumonconiosis. Chronic exposure to high levels of airborne or ingested lead may result in anemia, insomnia, weakness, nausea and constipation. Prolonged exposure may result in kidney and nervous system disorders. Women of child-bearing age should avoid exposure to lead due to post natal effects. Lead is potentially carcinogenic

**Exposure limits** for the ingredients are listed in Section II. Refer to the OSHA Lead Standard 29 CFR 1910.1025 for regulation and monitoring of exposure to lead. The 1989 OSHA TWA for welding fume is 5 mg/m<sup>3</sup>. At times the limit for a particular hazardous chemical is reached before the limit for welding fumes. TLV-TWAs should be used as a guide in the control of health hazards and not as fine lines between safe and excessive concentrations. As noted in Section V, the welding, brazing and soldering fume is a mixture of many components. Therefore, a statutory computation of the *equivalent exposure* is required. The *equivalent exposure* value for the welding and brazing fume mixture shall always be less than one. 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, remove immediately from area.

**Eye Contact:** Flush with water for at least fifteen minutes to remove all residue. Promptly get medical attention.

**Skin Contact:** Wash hands with soap and water to remove all residue. If a rash develops, consult a physician. If burns should occur from molten metal, treat for burn and get immediate medical assistance.

**Inhalation:** Remove to fresh air. If fumes, vapors, or dusts are inhaled, call a physician.

**Ingestion:** Call a physician or your Poison Control Center immediately. Advise of Section II. Give large quantities of water—induce vomiting.

**Carcinogenic Assessment (NTP Annual Report, IARC Monographs, Other):** Lead: ACGIH Animal Carcinogen. NTP Sufficient evidence of carcinogenicity from studies in experimental animals. IARC Possibly Carcinogenic to Humans. OSHA regulated.

**⚠ 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.)

## 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:

**Ventilation:** Use enough ventilation, local exhaust at the arc, or both, to keep the exposure within legal limits. In the worker's breathing zone and the general area, fumes and gases must be kept below the TLVs and the *equivalent exposure* must compute to less than one. Train the welder to keep his head out of the fumes.

**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 the TLVs.

**Protective Gloves:** Protective gloves are recommend, especially for high temperature applications to prevent burns.

**Eye Protection:** Approved safety glasses or welding goggles, appropriate to the procedure, should be worn.

**Protective Clothing and Equipment:** Full protective equipment normally used in a braze/welding operation so as to prevent any contact. Use face shield if danger of splashing, molten metal. Safety eyewash stations should be in close proximity.

**Procedure for Cleanup of Spills or Leaks:** Recyclable/solid. Vacuuming recommended for accumulated dusts. Conform with Federal, State, Local and OSHA regulatory statutes.

**Waste Disposal Methods:** Prevent waste from contaminating surrounding environment. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with Federal, State, and Local regulations.

**Precautions to be Taken in Handling and Storage:** Dust should be kept to a minimum. Dry storage. Ambient temperatures.

**Practice good house keeping:** Wash hands thoroughly before smoking or eating. Do not consume food, drink, tobacco products or apply cosmetics in areas where exposure exists.

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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.