SDS NO. 21-H
DATE REVISED: 02/23/2011

SAFETY DATA SHEET

This Safety Data Sheet complies with European Commission Directive 91/155/EEC, ISO 11014-1 and ANSI Z400.1

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: ALL-STATE GENERAL PURPOSE BRAZE WELDING AND WELDING FLUXES
ALL-STATE BRAZALOY NO. 1 FLUX P/N: 69080200
ALL-STATE BRAZALOY NO. 5 FLUX P/N: 69080204
ALL-STATE BRAZO FLUX P/N: 69080205

Application: Brazing and Welding Flux
Classification: None
Supplier: THE ESAB GROUP, INC., 801 Wilson Avenue, P. O. Box 517, Hanover, PA 17331
Telephone No.: 1-717-637-8911, 1-800-933-7070
Emergency No.: 1-717-637-8911 and 1-800-424-9300 (CHEMTREC)
Web site: www.esabna.com

2. HAZARDS IDENTIFICATION

Emergency Overview: A fine white, blue or red powder with no odor. Harmful if swallowed.

Avoid eye contact or inhalation of dust from these products. Dusts may irritate the eyes and can cause respiratory irritation.

These products are normally not considered hazardous as shipped. Gloves should be worn when handling to prevent contaminating hands with product dust.

Persons with a pacemaker should not go near brazing or welding operations until they have consulted their doctor and obtained information from the manufacturer of the device.

When these products are used in a brazing or welding process, the most important hazards are heat, radiation, electric shock and brazing and welding fumes.

Heat: Spatter and melting metal can cause burn injuries and start fires.

Radiation: Arc rays can severely damage eyes or skin.

Electricity: Electric shock can kill.

Fumes: Overexposure to brazing and welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes. Chronic overexposure to brazing and welding fumes may affect pulmonary function. Prolonged inhalation of nickel and chromium compounds above safe exposure limits can cause cancer. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait.

Flame Processing: When used with combustible gas equipment (e.g., oxy-acetylene torch), read the use and safety information for that equipment.

3. COMPOSITION/INFORMATION ON INGREDIENTS

These products are powders.

Ingredients	CAS#	EINECS#	Hazard classification[1]	IARC [2]	NTP [3]	OSHA List[4]
Borax Glass	1330-43-4	215-540-4	No	--	--	--
Boric Acid	10043-35-3	233-139-2	Repr. Cat. 2; R60-61	--	--	--
Iron Oxide	1309-37-1	215-168-2	No	--	--	--

(1) Hazard Classification according to European Council Directive 67/548/EEC, for R-phrases, see Section 16.
(2) Evaluation according to the International Agency for Research on Cancer.
1 – Human Carcinogen 2B – Possibly carcinogenic to humans
(3) Classification according to the 11th Report on Carcinogens, published by the US National Toxicology Program.
K – Known Carcinogen S – Suspect Carcinogen
(4) Carcinogen listing according to OSHA, Occupational Safety & Health Administration (USA).

APPROXIMATE COMPOSITION (WT. %)

	All-State Brazaloy No. 1 Flux	All-State Brazaloy No. 5 Flux	All-State Brazo Flux
Borax	15-40	15-40	10-30
Boric Acid	60-100	30-60	60-100
Iron Oxide	--	1-5	--

4. FIRST AID MEASURES

Inhalation: If breathing has stopped, perform artificial respiration and obtain medical assistance immediately! If breathing is difficult, provide fresh air and call physician.

Eye contact: For radiation burns due to arc flash, see physician. To remove dusts or fumes flush with water for at least fifteen minutes. If irritation persists, obtain medical assistance.

Skin contact: For skin burns from arc radiation, promptly flush with cold water. Get medical attention for burns or irritations that persist. To remove dust or particles wash with mild soap and water.

Ingestion: Call a physician or poison control center immediately. Do not induce vomiting unless directed to do so by a physician.

Electric shock: Disconnect and turn off the power. Use a nonconductive material to pull victim away from contact with live parts or wires. If not breathing, begin artificial respiration, preferably mouth-to-mouth. If no detectable pulse, begin Cardio Pulmonary Resuscitation (CPR). Immediately call a physician.

General: Move to fresh air and call for medical aid.

5. FIRE FIGHTING MEASURES

No specific recommendations for brazing and welding consumables. Brazing and welding arcs and sparks can ignite combustible and flammable materials. Use the extinguishing media recommended for the burning materials and fire situation. Wear self-contained breathing apparatus as fumes or vapors may be harmful.

6. ACCIDENTAL RELEASE MEASURES

Solid objects may be picked up and placed into a container. Liquids or pastes should be scooped up and placed into a container. Wear proper protective equipment while handling these materials. Do not discard as refuse.

Personal precautions: refer to Section 8.

Environmental precautions: refer to Section 13.

7. HANDLING AND STORAGE

Handling:

Avoid contact with skin, eyes and clothing. Wear gloves when handling brazing and welding consumables. Do not swallow or breathe vapors produced by use of product. Wash hands after using. Some individuals can develop an allergic reaction to certain materials. Retain all warning and identity labels.

Storage:

Keep separate from chemical substances like acids and strong bases, which could cause chemical reactions.

Store in cool, dry, well-ventilated place.

8. EXPOSURE CONTROL/PERSONAL PROTECTION

Avoid exposure to brazing and welding fumes, radiation, spatter, electric shock, heated materials and dust.

Engineering measures (Brazing and welding operations):

Ensure sufficient ventilation, local exhaust, or both, to keep brazing and welding fumes and gases from breathing zone and general area. Keep working place and protective clothing clean and dry. Train welders to avoid contact with live electrical parts and insulate conductive parts. Check condition of protective clothing and equipment on a regular basis.

Personal protective equipment (Brazing and welding operations):

Use respirator or air supplied respirator when brazing or welding in a confined space, or where local exhaust or ventilation is not sufficient to keep exposure values within safe limits. Use special care when brazing or welding painted or coated steels since hazardous substances from the coating may be emitted. Wear hand, head, eyes, ear and body protection like welders gloves, helmet or face shield with filter lens, safety boots, apron, arm and shoulder protection. Keep protective clothing clean and dry.

Use industrial hygiene monitoring equipment to ensure that exposure does not exceed applicable national exposure limits. The following limits can be used as guidance. For information about brazing and welding flux fume analysis refer to Section 10. When used with brazing and welding products, refer to the brazing or welding product SDS, Section 10, for information on brazing and welding fumes.

Substance		CAS#	ACGIH TLV [(1)] mg/m^3	OSHA PEL [(2)] mg/m^3
Borax	(as borates)	1330-43-4	2 ***, 6 (STEL) ***	None
Boric Acid	(as borates)	10043-35-3	2 ***, 6 (STEL) ***	None
Iron Oxide		1309-37-1	5**	10 (fume)

(1) Threshold Limit Values according to American Conference of Governmental Hygienists, 2010

(2) Permissible Exposure Limits according to the Occupational Safety & Health Administration (USA)

Unless noted, all values are for 8 hour time weighted averages (TWA).

* Total dust, ** Respirable fraction, *** Inhalable fraction.

NOTE: Some of these products may not contain all of the materials listed. For details of composition, refer to the COMPOSITION TABLES in Section 3.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Blue (No. 1 Flux), red (No. 5 Flux) or white (Brazo Flux) powder with no odor.
Specific Gravity:	1.62-1.82 (H_2O = 1)
Boiling Point:	Not determined.
Freezing Point:	Not determined.
Vapor Pressure:	Negligible.
Vapor Density:	Not applicable.
Evaporation Rate:	Solid. Does not evaporate.
Solubility in Water:	None.
Flash Point:	None.
Upper/Lower Flame Limit:	None.
Auto-ignition Temperature:	Not determined.

10. STABILITY AND REACTIVITY

General: These products are only intended for normal brazing and welding purposes.

Stability: These products are stable under normal conditions.

Reactivity: Contact with chemical substances like acids or strong bases could cause generation of gas.

When these products are used in a brazing and welding process, hazardous decomposition products would include those from the volatilization, reaction or oxidation of the materials listed in Section 3 and those from the brazing and welding consumables, the base metal and coating.

Refer to applicable national exposure limits for fume compounds, including those exposure limits for fume compounds found in Section 8 of this SDS and the brazing and welding consumable SDS. A significant amount of the chromium in the fumes can be hexavalent chromium, which has a very low exposure limit in some countries. Manganese and nickel also have low exposure limits that may be easily exceeded.

Reasonably expected gaseous products would include carbon oxides, nitrogen oxides and ozone. Air contaminants around the brazing and welding area can be affected by the brazing and welding process and influence the composition and quantity of fumes and gases produced.

11. TOXICOLOGICAL INFORMATION

Inhalation of brazing and welding fumes and gases can be dangerous to your health. Classification of brazing and welding fumes is difficult because of varying base materials, coatings, air contamination and processes. The International Agency for Research on Cancer has classified welding fumes as possibly carcinogenic to humans (Group 2B).

Acute toxicity: Overexposure to brazing and welding fumes may result in symptoms like metal fume fever, dizziness, nausea, dryness or irritation of the nose, throat or eyes.

Borax: 2.66 g/kg

Boric acid: 2.6 g/kg

Iron oxide: No value found but considered very low toxicity.

Chronic toxicity: Overexposure to brazing and welding fumes may affect pulmonary function. Prolonged inhalation of nickel and chromium compounds above safe exposure limits can cause cancer. Overexposure to manganese and manganese compounds above safe exposure limits can cause irreversible damage to the central nervous system, including the brain, symptoms of which may include slurred speech, lethargy, tremor, muscular weakness, psychological disturbances and spastic gait.

12. ECOLOGICAL INFORMATION

Brazing and welding consumables and materials could degrade/weather into components originating from the consumables or from the materials used in the brazing and welding processes. Avoid exposure to conditions that could lead to accumulation in soils or groundwater.

13. DISPOSAL CONSIDERATIONS

Discard any product, residue, disposable container or liner in an environmentally acceptable manner, in full compliance with federal and local regulations. Use recycling procedures if available.

USA RCRA: These products are not considered hazardous waste if discarded.

Residues from brazing and welding consumables and processes could degrade and accumulate in soils and groundwater.

14. TRANSPORT INFORMATION

No international regulations or restrictions are applicable.

15. REGULATORY INFORMATION

Read and understand the manufacturer's instructions, your employer's safety practices and the health and safety instructions on the label. Observe any federal and local regulations. Take precautions when brazing and welding and protect yourself and others.

WARNING: Brazing and welding fumes and gases are hazardous to your health and may damage lungs and other organs. Use adequate ventilation.

ELECTRIC SHOCK can kill.

ARC RAYS and SPARKS can injure eyes and burn skin.

Wear correct hand, head, eye and body protection.

Canada: WHMIS classification: Class D; Division 2, Subdivision A

Canadian Environmental Protection Act (CEPA): All constituents of these products are on the Domestic Substance List (DSL).

USA: Under the OSHA Hazard Communication Standard, these products are considered hazardous.

These products contain or produce 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.)

United States EPA Toxic Substance Control Act: All constituents of these products are on the TSCA inventory list or are excluded from listing.

CERCLA/SARA Title III

Reportable Quantities (RQs) and/or Threshold Planning Quantities (TPQs):

Ingredient name	RQ (lb)	TPQ (lb)
Product is a solid solution in the form of a solid article.	--	--

Spills or releases resulting in the loss of any ingredient at or above its RQ require immediate notification to the National Response Center and to your Local Emergency Planning Committee.

Section 311 Hazard Class

As shipped: Immediate In use: Immediate

EPCRA/SARA Title III 313 Toxic Chemicals

The following metallic components are listed as SARA 313 “Toxic Chemicals” and potential subject to annual SARA 313 reporting. See Section 3 for weight percent.

Ingredient name	Disclosure threshold
No ingredients listed in this section.	--

16. OTHER INFORMATION

This Safety Data Sheet has been revised due to modifications to several paragraphs and/or new format. This SDS supersedes 21-F.

Refer to ESAB "Welding and Cutting - Risks and Measures", F52-529 "Precautions and Safe Practices for Electric Welding and Cutting" and F2035 "Precautions and Safe Practices for Gas Welding, Cutting and Heating" available from ESAB, and to:

USA: Contact ESAB at www.esabna.com or 1-800-ESAB-123 if you have questions about this SDS.

American National Standard Z49.1 "Safety in Welding and Cutting", ANSI/AWS F1.5 "Methods for Sampling and Analyzing Gases from Welding and Allied Processes", ANSI/AWS F1.1 "Method for Sampling Airborne Particles Generated by Welding and Allied Processes", AWSF3.2M/F3.2 "Ventilation Guide for Weld Fume", American Welding Society, 550 North Le Jeune Road, Miami, Florida, 33135. Safety and Health Fact Sheets available from AWS at www.aws.org.

OSHA Publication 2206 (29 C.F.R. 1910), U.S. Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250-7954.

American Conference of Governmental Hygienists (ACGIH), Threshold Limit Values and Biological Exposure Indices, 6500 Glenway Ave., Cincinnati, Ohio 45211, USA.

NFPA 51B "Standard for Fire Prevention During Welding, Cutting and Other Hot Work" published by the National Fire Protection Association, 1 Batterymarch Park, Quincy, MA 02169.

UK: WMA Publication 236 and 237, "Hazards from Welding Fume", "The arc welder at work, some general aspects of health and safety".

Germany: Unfallverhütungsvorschrift BGV D1, "Schweißen, Schneiden und verwandte Verfahren".

Canada: CSA Standard CAN/CSA-W117.2-01 "Safety in Welding, Cutting and Allied Processes".

These products have been classified according to the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

R-phrases: R60 – May impair fertility.

R61 – May cause harm to the unborn child.

ESAB requests the users of these products to study this Safety Data Sheet (S.D.S.) and become aware of product hazards and safety information. To promote safe use of these products a user should:

- notify its employees, agents and contractors of the information on this S.D.S and any product hazards/safety information.
- furnish this same information to each of its customers for these products.
- request such customers to notify employees and customers for the same product hazards and safety information.

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