

SAFETY DATA SHEET

SECTION 1: Identification

1.1 GHS product identifier: ET03 A
1.2 Other means of identification: Epoxy Resin
1.3 Recommended use of the chemical and restrictions on use: N/A
1.4 Supplier's details:
Aerospace Composite Products
78 Lindbergh Ave
Livermore CA 94551
INFORMATION PHONE NUMBER: 925-443-5900

1.5 Emergency phone number: 682-232-4788

SECTION 2.0: Hazard(s) identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

2.1 Classification of the substance or mixture:

Health
Skin Corrosion/Irritation, Category 2
Eye Damage/Irritation, Category 2
Skin Sensitizer, Category 1

2.2 GHS label elements:



Signal word: Warning

Hazard statements:

H302 Harmful if swallowed.
H315 Causes skin irritation.
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.

Precautionary statements:

Prevention:

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P272 Contaminated work clothing should not be allowed out of the workplace.

P273 Avoid release to the environment.

P280 Wear protective gloves/eye protection/face protection.

Response:

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P362+P364 Take off contaminated clothing and wash it before reuse.

P391 Collect spillage.

Disposal:

P501 Dispose of contents/container in accordance with local, regional and international regulations.

Supplemental information: No Additional Information

Precautionary statements are listed according to the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS) - Annex III. Regulations in individual countries/regions may determine which statements are required on the product label. See product label for specifics.

2.3 Other hazards which do not result in classification: N/A

2.4 Hazards Material Information System (United States):

Health	2
Flammability	1
Physical Hazard	0

Hazard Codes: 0=Chronic Hazard 0=Minimal Hazard, 1=Slight Hazard, 2=Moderate Hazard, 3=Serious Hazard, 4=Severe Hazard

SECTION 3: Composition/information on ingredients

Chemical Identity.	CAS No	Concentration
Phenol-Formaldehyde Polymer Glycidyl Ether	28064-14-4	5-95%
Phenol, 4,4'-(1-methylethylidene)bis, polymer with (chloromethyl)oxirane	25085-99-8	5-95%
Oxirane, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(oxymethylene)]bis-	17557-23-2	5-95%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures:

Never give fluids or induce vomiting if patient is unconscious or is having convulsions.

Inhalation: Move effected persons to fresh air; if effects occur, consult a physician.

Skin Contact: Continued and thorough washing in flowing water for at least 15 minutes is imperative while removing contaminated clothing. Prompt medical consultation is essential. Wash clothing before reuse. Destroy contaminated leather items.

Eye Contact: Wash immediately and continuously with flowing water for at least 15 minutes. Remove contact lenses after the first 5 minutes and continue washing. Obtain prompt medical consultation, preferably from an ophthalmologist.

Ingestion: If swallowed, call a physician immediately. Remove stomach contents by gastric suction or induce vomiting only as directed by a physician or medical personnel. Do not give anything by mouth to an unconscious person. Note to Physician: No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

4.2 Most Important symptoms/effects, acute and delayed:

Signs and Symptoms of Exposure (Acute Effects): Contact with eyes may cause mild irritation and discomfort. Contact with skin causes irritation, redness and discomfort which is transient. Inhalation of mists may cause irritation in the respiratory tract. Inhalation of vapors from heated materials may cause irritation in the respiratory tract. Coughing and chest pain may result. Signs and Symptoms of Exposure (Possible Longer Term Effects): Repeated and/or prolonged exposure may cause allergic reaction/sensitization. Repeated and/or prolonged exposures may result in: adverse skin effects (such as rash, irritation or corrosion). Medical Conditions Generally Aggravated by Exposure: Skin disorders and Allergies Carcinogens under OSHA, ACGIH, NTP, IARC, Other: This product contains no known or suspected carcinogens in concentrations of 0.1 percent or greater.

4.3 Indication of immediate medical attention and special treatment needed, if necessary: N/A

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media:

Water fog or fine spray. Carbon dioxide. Alcohol resistant foam. Dry chemical fire extinguishers.

5.2 Specific hazards arising from the chemical:

Flash point is Not Determined. May generate toxic or irritating combustion products. Sudden reaction and fire may occur if product is mixed with an oxidizing agent.

5.3 Special protective actions for fire-fighters:

Wear positive-pressure self-contained breathing apparatus and protective firefighting clothing (includes firefighting helmet, coat, trousers, boots and gloves.)

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures:

Wear adequate personal protective equipment; see Section 8-EXPOSURE CONTROLS/PERSONAL PROTECTION.

6.2 Methods and materials for containment and clean up:

Large spills: Contain with dike. Pump into suitable and properly labeled containers.

Small spills: Dilute with water and recover or use non-combustible absorbent material/sand and shovel into appropriate containers.

SECTION 7: Handling and storage

7.1 Precautions for safe handling:

Avoid contact with skin or eyes. Avoid breathing of vapors. Handle in well-ventilated workspace. When handling, do not eat, drink, or smoke. Other Precautions: Emergency showers and eye wash stations should be readily accessible. Adhere to work practice rules established by government regulations (e.g. OSHA).

7.2 Conditions for safe storage, including any incompatibilities: Keep away from: oxidizers. Keep in cool, dry, ventilated storage areas and in closed containers.

SECTION 8: Exposure controls / personal protection

8.1 Control parameters

Component	CAS No.	Exposure Limits	Source
Phenol-Formaldehyde Polymer Glycidyl Ether	28064-14-4	> 2000 mg/kg oral rat	ACGIH
Phenol, 4,4'-(1-methylethylidene)bis, polymer with (chloromethyl)oxirane	25085-99-8	11,400 mg/kg oral rat	ACGIH
Oxirane, 2,2'-[(2,2-dimethyl-1,3-propanediyl)bis(oxymethylene)]bis-	17557-23-2	4,500 mg/kg oral rat	ACGIH

8.2 Appropriate engineering controls: No specific controls needed.

8.3 Individual protection measures, such as personal protective equipment:

Eye Protection: Chemical safety glasses. A full-face shield and vapor respirator is recommended for operations involving spraying or other operations placing this material under pressurized conditions.

Hand Protection: Neoprene rubber gloves. Impermeable gloves. Nitrile rubber gloves. The breakthrough time of the selected glove(s) must be greater than the intended use period.

Respiratory Protection: Not required under normal conditions and in a well-ventilated workplace. At elevated temperatures, a cartridge mask National Institute for Occupational Safety and Health (NIOSH) approved for organic vapors may be appropriate. Protective Clothing: Long sleeved clothing.

Work and Hygienic Practices: Provide readily accessible eye wash stations and safety showers. Wash at the end of each work shift and before eating, smoking or using the toilet.

Notice: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all requisite workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), as well as the instructions/specifications provided by the glove supplier.

SECTION 9: Physical and chemical properties

9.1 Appearance (physical state, color, etc.): Aluminum

9.2 Odor: Epoxy Odor

9.3 Odor threshold: N/A

9.4 pH: Not Determined

9.5 Melting point/freezing point: Not Determined

9.6 Initial boiling point and boiling range: Not Determined

9.7 Flash Point: Not Determined

9.8 Evaporation rate: N/A

9.9 Flammability (solid, gas): N/A

9.10 Upper/lower flammability or explosive limits: LFL-Not Determined; UFL-Not Determined

9.11 Vapor pressure: Not Determined

9.12 Vapor Density: N/A

9.13 Relative density(Specific Gravity): 1.5 -1.55

9.14 Solubility(ies): Liquid Components are Not Readily Soluble in Water

9.15 Partition coefficient; n-octanol/water: N/A

9.16 Auto-ignition temperature: >300°C

9.17 Decomposition temperature: N/A

9.18 Viscosity: Paste

9.19 % Volatile (VOC): 0g/L

SECTION 10: Stability and reactivity

10.1 Reactivity: N/A

10.2 Chemical stability: Stable

10.3 Possibility of hazardous reactions: Will not occur

10.4 Conditions to avoid: N/A

10.5 Incompatible materials: Avoid strong acids, bases, and oxidizing agents. Avoid contact with amines

10.6 Hazardous decomposition products: Carbon Monoxide in a fire. Carbon Dioxide in a fire. Irritating and toxic fumes at elevated temperatures.

SECTION 11: Toxicological information

11.1 Likely routes of exposure: Eye Contact, Skin Contact, Ingestion.

11.2 Symptoms related to the physical, chemical and toxicological characteristics:

Ingestion: This material has a low potential for toxic effects due to ingestion.

Skin Contact: Prolonged or widespread skin contact is not likely to cause toxic effects.

Irritation:

Skin: Skin contact has caused allergic skin reactions in certain sensitized individuals.

Eyes: May cause slight temporary eye irritation with local redness. Mechanical irritation possible due to solid filler materials.

Inhalation: May cause allergic respiratory response upon exposure to heated vapors.

11.3 Delayed and immediate effects and also chronic effects from short and long term exposure:

Carcinogen: This material contains no known or suspected carcinogens.

Mutagen: This material contains no known or suspected mutagens.

Reproductive Hazard: This material contains no materials known or suspected to cause reproductive hazards.

11.4 Numerical measures of toxicity:

This finished product has not been tested to determine individual toxicological/ecological limits. Individual components of this mixture have been independently tested by the raw material manufacturers and any known results have been presented below. The results for the individual components may not be representative of the toxicity of this finished product.

Ingredient Name	CAS No.	Test	Result	Route	Species
Phenol-Formaldehyde Polymer Glycidyl Ether	28064-14-4	LD50	> 2000 mg/kg	Oral	Rat
		LD50	> 2100 mg/kg	Dermal	Rabbit
Phenol, 4,4'-(1-methylethylidene)bis, polymer with (chloromethyl)oxirane	25085-99-8	LD50	11,400 mg/kg 2000 mg/kg	Oral Dermal	Rat Rabbit
Oxirane, 2,2'-[(2,2-dimethyl-1,3- propanediyl)bis(oxymethylene)]bis-	17557-23-2	LD50	4,500 mg/kg	Oral	Rat
		LD50	> 2,100 mg/kg	Dermal	Rabbit

SECTION 12: Ecological information

12.1 Ecotoxicity:

No ecological testing has been conducted on this product.

12.2 Persistence and degradability:

This material contains components that show little or no evidence of biodegradability. Caution should be taken to prevent release to the environment. See Section 13 for further information.

Degradation: Based on the stringent OECD test guidelines, this material cannot be considered as readily

biodegradable; however, these results do not necessarily mean that the material is not biodegradable under environmental conditions.

12.3 Bioaccumulative potential: N/A

12.4 Mobility in soil: N/A

12.5 Other adverse effects: N/A

SECTION 13: Disposal considerations

13.1 Disposal methods:

Preferred method of disposal includes incineration under controlled conditions in accordance with all local and national laws and regulations. The generation of waste should be avoided or minimized wherever possible. Untreated material is not suitable for disposal. Waste, even small quantities, should never be poured down drains, sewers or watercourses. Waste must be disposed of in accordance with federal, state and local environmental control regulations. This material, when properly mixed and cured with its hardener component at the proper mix ratio, may be safely landfilled. Contaminated packaging: Empty containers can only be disposed of when the remaining product adhering to the container walls has been removed. Hazard warning labels should be removed from the container only after it has been properly emptied.

SECTION 14: Transport information

14.1 UN number: Not Regulated

14.2 UN proper shipping name: Liquid Plastic, NOI

14.3 Transport hazard class(es): Not Regulated

14.4 Packing group, if applicable: Not Regulated

14.5 Environmental hazards: N/A

14.6 Transport in bulk: N/A

14.7 Special precautions for user: N/A

Notes: For surface shipments within the United States: Not regulated

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations:

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES: Acute health hazard. Chronic health hazard

313 REPORTABLE INGREDIENTS: This product contains the following substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372: None

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: For this/these chemicals, release of more than the Reportable Quantity to the environment in a 24-hour period requires notification to the National Response Center (800-424-8802 or 202-426-2675): None

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA STATUS: This product or its components are listed in or exempt from the TSCA inventory requirements.

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) 29 CFR1910.119---PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS: None of the chemicals in this product are considered highly hazardous by OSHA.

CALIFORNIA PROPOSITION 65: This product contains chemical(s) which are known to the State of California to cause cancer, birth defects or other reproductive harm, and may be subject to the requirements of California Proposition 65 (CA Health & Safety Code Section 25249.5): None

OSHA HAZARD COMM. RULE: The contents of the SDS comply with the OSHA Hazard Communication Standard 29 CFR 1910.1200

Canada

WHMIS (Canada)

Class D-2B: Material causing other toxic effects (Toxic).

Canadian lists Canadian NPRI: None required.

SECTION 16: Other information

Users Responsibility/Disclaimer of Liability:

IMPORTANT: WHILE THE DESCRIPTIONS, DESIGNS, DATA AND INFORMATION CONTAINED HEREIN ARE PRESENTED IN GOOD FAITH AND BELIEVED TO BE ACCURATE , IT IS PROVIDED FOR YOUR GUIDANCE ONLY. BECAUSE MANY FACTORS MAY AFFECT PROCESSING OR APPLICATION/USE, WE RECOMMEND THAT YOU MAKE TESTS TO DETERMINE THE SUITABILITY OF A PRODUCT FOR YOUR PARTICULAR PURPOSE PRIOR TO USE. NO WARRANTIES OF ANY KIND, EITHER EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE MADE REGARDING PRODUCTS DESCRIBED OR DESIGNS, DATA OR INFORMATION SET FORTH, OR THAT THE PRODUCTS, DESIGNS, DATA OR INFORMATION MAY BE USED WITHOUT INFRINGING THE INTELLECTUAL PROPERTY RIGHTS OF OTHERS. IN NO CASE SHALL THE DESCRIPTIONS, INFORMATION, DATA OR DESIGNS PROVIDED BE CONSIDERED A PART OF OUR TERMS AND CONDITIONS OF SALE. FURTHER, YOU EXPRESSLY UNDERSTAND AND AGREE THAT THE DESCRIPTIONS, DESIGNS, DATA, AND INFORMATION FURNISHED BY OUR COMPANY HEREUNDER ARE GIVEN GRATIS AND WE ASSUME NO OBLIGATION OR LIABILITY FOR THE DESCRIPTION, DESIGNS, DATA AND INFORMATION GIVEN OR RESULTS OBTAINED, ALL SUCH BEING GIVEN AND ACCEPTED AT YOUR RISK. END OF DATA SHEET

MATERIAL SAFETY DATA SHEET**MSDS****SECTION I - PRODUCT INFORMATION**

PRODUCT NAME (S): ET03 B

Aerospace Composite Products
78 Lindbergh Ave
Livermore CA 94551**EMERGENCY PHONE#**
925-443-5900

DATE OF PREPARATION: 3/27/2013

PRODUCT CLASS: EPOXY HARDENERS
CHEMICAL FAMILY: ALIPHATIC AMINESDOT SHIPPING NAME: Amines, Corrosive Liquid n.o.s.
(contains triethylene tetramine)U.S.DOT HAZARD CLASS: CORROSIVE LIQUID
U.S.DOT ID NUMBER: UN2735, 8, PG II
U.S.DOT LABEL: CORROSIVE LIQUID, 8, UN2735, PG II

HMIS CODES:	HAZARD RATINGS:
HEALTH: 3	4=SEVERE
FLAMMABILITY: 1	3=SERIOUS
REACTIVITY: 0	2= MODERATE
	1=SLIGHT
	0= MINIMAL

SECTION II - HAZARDOUS INGREDIENTS

The following components are defined hazardous in accordance with 29CFR1910.1200:***

COMPONENT	PERCENT*	TLV**	CAS #
Triethylene tetramine	90-1%	ne	0122-24-3
Diethyltoluenediamine	90-1%	ne	68479-98-1

** TLV AS ESTABLISHED BY ACGIH AND OR OSHA STANDARD

*** IF NO COMPONENTS ARE LISTED THEN THIS MATERIAL CONTAINS NO HAZARDOUS SUBSTANCES ACCORDING TO 29GFR1910.1200.

SECTION III - PHYSICAL DATAPHYSICAL STATE: LIQUID
COLOR: AMBER
SPECIFIC GRAVITY: 1.00
LBS\GALLON: 8.33
SOLUBILITY IN WATER: MODERATE
VOC: < .1%**SECTION IV - FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT*: 215 F TCC

EXTINGUISHING MEDIA: CO2, DRY CHEMICAL, FOAM, WATER
SPECIAL FIRE FIGHTING PROCEDURES/UNUSUAL FIRE OR EXPLOSION HAZARDS:
Full emergency equipment with self-contained breathing apparatus should be worn.
During a fire irritating, toxic gases (see Reactive Data) and smoke are present from decomposition/combustion. Closed container may explode when exposed to extreme heat.
Solid residue will support combustion when water has evaporated.**SECTION V - HEALTH HAZARD DATA**EFFECTS OF OVER EXPOSURE: ACUTE:
EYES: Can cause severe irritation and possibly permanent injury
SKIN: Severely irritating to skin, substance can be absorbed through skin in harmful amounts.
INGESTION: May cause nausea, vomiting, abdominal pain, or other signs of illness.
INHALATION: Vapors or fumes can irritate nose and throat.
CHRONIC: Prolonged skin contact may cause delayed and serious injury.**SECTION VI - EMERGENCY & FIRST AID PROCEDURES**

EYE CONTACT: Flush immediately with clean, lukewarm water (low pressure) for at least 15 minutes, while holding eyelids open. Obtain medical attention immediately.
SKIN CONTACT: Remove contaminated clothing. Wash affected areas thoroughly with soap and water. Wash contaminated clothing before reuse. Contact physician if irritation occurs.
INHALATION: Move to fresh air. Administer oxygen or artificial respiration as needed. Obtain medical attn.
INGESTION: INDUCE VOMITING ONLY ON ADVISE OF A PHYSICIAN. TREAT SYMPTOMATICALLY. DO NOT GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON. **CONSULT PHYSICIAN IMMEDIATELY.**

SECTION VII - SPECIAL PROTECTION INFO

EYE PROTECTION: Liquid chemical goggles or full-face shield. Contact lenses should not be worn.

SKIN PROTECTION: Chemical resistant gloves (natural latex and neoprene recommended). Cover as much of the exposed skin area as possible with appropriate clothing. If skin creams are used, keep the area covered only by the cream to a minimum.

VENTILATION AND RESPIRATORY PROTECTION: Exhaust ventilation sufficient to keep the airborne concentrations of the hazardous constituents below the TLV or other appropriate exposure limit must be utilized. Exhaust air may need to be cleaned by scrubbers or filters to reduce environmental contamination. Curing ovens must be ventilated to prevent the build up of explosive atmospheres and to prevent off gases from entering the work place. In addition, a

respirator that is recommended or approved for use in organic vapor containing environments (air purifying or fresh air supplied) may be necessary. In spray applications an organic vapor / particulate respirator or air supplied unit is necessary. Consider type of application and environmental concentrations. Take into account other materials being used concurrently. Observe OSHA regulations for respirator use (29cfr1910.134).

OTHER: Safety showers and eye wash stations should be easily accessible to the work area. Worker training is important. Follow all label precautions.

SECTION VIII - REACTIVITY DATA

STABILITY:

STABLE UNDER NORMAL STORAGE, POLYMERIZATION WILL NOT OCCUR

INCOMPATIBILITY AVOID:

ACIDS, OXIDIZING MATERIALS, ALDEHYDES, KETONES, AND ORGANIC HALIDES

HAZARDOUS DECOMPOSITION PRODUCTS BY FIRE:

CO, CO₂, OXIDES OF NITROGEN, AMMONIA, AND OTHER

UNKNOWN ORGANIC COMPOUNDS.

SECTION IX - SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED:

Remove all sources of ignition. Avoid contact with material. Ventilate the area. Equip clean-up crew with appropriate protective equipment. Personal not wearing proper protective equipment should be excluded from the area until cleanup is complete. Dike or impound spilled material and control further spillage if feasible. Notify appropriate authorities if necessary. Cover spill with sawdust, vermiculite, or other absorbent material; collect material in open containers. Remove containers to safe place cover. Flush spill area with water.

WASTE DISPOSAL METHOD:

Dispose of waste in accordance with Federal, State, and Local regulations.

SECTION X - SPECIAL PRECAUTIONS & STORAGE DATA

AVOID SKIN AND EYE CONTACT.

AVOID BREATHING VAPOR, MIST OF FUMES.

ENSURE THAT ALL CONTAINERS ARE PROPERLY LABELED TO PREVENT ACCIDENTAL INGESTION OR IMPROPER DISPOSAL.

RESEAL PART USED CONTAINERS.

WASH WITH SOAP AND WATER BEFORE EATING, DRINKING OR USING TOILET FACILITIES.

STORE UNDER COOL, DRY CONDITIONS AWAY FROM OPEN FLAMES AND HIGH TEMPERATURES.

OBSERVE CONDITIONS OF GOOD INDUSTRIAL HYGIENE AND SAFE WORKING PRACTICE.

SECTION XI - REGULATORY INFORMATION

TSCA All components of this product are registered under the regulations of the Toxic Substance Control Act.

SARA TITLE III (Applicable). Applicable.

We believe that the information contained herein is current as of the data of this Material Safety Data Sheet. Since the use of this information and these opinions and the conditions of use of this products are not within the control of Aerospace Composite Products Inc., it is the user's obligation to determine the conditions of safe use of this product.

