MATERIAL SAFETY DATA SHEET

Hi-Temp Lab-metal

1. Product And Company Identification

Supplier
Alvin Products, Inc.
350 Merrimack Street
Lawrence, MA 01843-1748

Telephone Number: 978-975-4580
FAX Number: 978-975-2621
E-Mail: sales@alvinproducts.com
Web Site: www.alvinproducts.com

Manufacturer
Alvin Products, Inc.
350 Merrimack Street
Lawrence, MA 01843-1748

Telephone Number: 978-975-4580
FAX Number: 978-975-2621
E-Mail: sales@alvinproducts.com
Web Site: www.alvinproducts.com

Supplier Emergency Contacts & Phone Number
INFOTRAC (24-hrs): 800-535-5053

Manufacturer Emergency Contacts & Phone Number
INFOTRAC (24-hrs): 800-535-5053

Issue Date: 08/08/2002

Product Name: Hi-Temp Lab-metal
CAS Number: NE
MSDS Number: 750
Product Code: 11101, 11102, 11104

Product/Material Uses

Repair compound for high-heat applications. One-part metal putty able to withstand temperatures to 1000 deg. F. Apply directly from the can with a putty knife. Can be machined, ground, filed, and sanded. Repairs items prior to lengthy or repeated powder coating processes. Ideal for repairs in powder coating, metalworking, welding, fabricating, heating, construction, die casting, and mold refinishing which may be subjected to high temperatures. Used to repair fabricated parts, core boxes, boilers, mufflers, exhaust systems, molds, wood and coal burning stoves, grills, engines, radiators, and industrial ovens.

2. Composition/Information On Ingredients

Ingredient Name	CAS Number		Percent Of Total Weight
POWDERED ALUMINUM	7429-90-5		43 - 57
ETHYL BENZENE	100-41-4	<	1
METHYL ETHYL KETONE	78-93-3	<	1
SILICA, AMORPHOUS FUSED	60676-86-0		5 - 15
TOLUENE	108-88-3		1 - 5
XYLENE	1330-20-7		5 - 15
ZINC POWDER	7440-66-6		13 - 27

EMERGENCY OVERVIEW

CAUTION: FLAMMABLE MIXTURE - VAPOR HARMFUL
DO NOT USE NEAR FIRE OR FLAME

WARNING: FLAMMABLE LIQUID AND VAPOR. Contains powdered aluminum, zinc powder, silica, xylene, methyl ethyl ketone, toluol, and ethylbenzene. USE ONLY WITH ADEQUATE VENTILATION.

Vapor Harmful - may affect the brain or nervous system, causing dizziness, headache, or nausea. Causes eye,

EMERGENCY OVERVIEW - Continued

skin, nose and throat irritation. Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal. Keep away from heat, sparks and open flame. Vapors may cause flash fire. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. Avoid contact with skin and eyes.

KEEP CAN TIGHTLY CLOSED - STORE IN COOL PLACE.
KEEP OUT OF REACH OF CHILDREN.

3. Hazards Identification

Primary Routes(s) Of Entry

Inhalation, Skin absorption, Skin contact, Eye contact

Eye Hazards

Direct contact and exposure to vapors is irritating to mucous membranes and the eyes, possibly causing stinging, tearing, redness and swelling of the eyes. Liquid contact or high vapor concentrations may cause possible corneal damage.

Skin Hazards

Contact may cause mild to moderate skin and mucous membrane irritation. Prolonged skin contact may defat the skin and produce dermatitis. Some possible symptoms include redness, burning, drying and cracking of the skin.

Absorption of this material through the skin is possible. But it is unlikely that harmful amounts will be absorbed from a single, brief exposure. Absorption of large amounts from prolonged exposure may produce central nervous system depression and effects similar to those from inhalation.

Ingestion Hazards

Accidental swallowing of minute amounts of this material during normal handling is not likely to cause harmful effects. Swallowing large amounts may be harmful. Aspiration into the lungs after swallowing or vomiting can result in lung inflammation, lung injury and even death due to chemical pneumonia, respiratory failure and cardiac arrest.

Ingestion may also cause irritation of the gastrointestinal tract and other systemic effects from absorption. Possible symptoms could include: metallic taste, nausea, vomiting, diarrhea, central nervous system depression (dizziness, drowsiness, weakness, fatigue, headache, unconsciousness), muscle weakness, loss of coordination, coma, confusion, or possibly death.

Inhalation Hazards

Inhalation of low vapor concentrations under normal conditions of handling is not likely to cause harmful effects. Inhalation of high concentrations for brief periods may cause irritation to the nose, throat and lungs, and central nervous system effects.

Prolonged or intentional exposure may lead to the damage of many organ systems, including the central and peripheral nervous system, vision, hearing, liver, kidneys, lungs, heart and blood. Symptoms may include: headache, dizziness, drowsiness, loss of coordination, fatigue, headache, irritation, nausea, vomiting, sleep disturbance, and mental confusion. Overexposures to components of this product have been associated with permanent brain and central nervous system damage, cardiac sensitization and kidney damage.

Product contains aluminum, zinc and silica powders. Short exposures to high concentrations of dust during filing, grinding and sanding of dry product may cause coughing and mild temporary irritation. Metal fume fever may be caused by inhalation of welding fumes from heated zinc metal. Symptoms, such as sweating, shivering, headache, fever, chills, thirstiness, muscle aches, nausea, vomiting, weakness and tiredness, can occur within 4

3. Hazards Identification - Continued

Inhalation Hazards - Continued

to 12 hours after exposure. Crystalline silica may be formed when heated to 1000 deg. Exposure to crystalline silica dust my cause chronic lung disease.

Chronic/Carcinogenicity Effects

This material is not expected to cause cancer in humans.

Conditions Aggravated By Exposure

Individuals with diseases of the nervous system, respiratory tract, skin, heart, liver, and kidneys should avoid or limit exposure. Those persons susceptible to dermatitis should limit skin contact.

4. First Aid Measures

Eye

In case of eye contact, blot away excess chemical from around the eyes. Hold eyelids apart and immediately flush eyes with plenty of luke warm, gently flowing water for at least 15 minutes. Get medical attention.

Skin

Remove contaminated clothing and shoes. Wash affected areas with soap and water. Get medical attention immediately if irritation (redness, rash, blistering) develops. Wash clothing before reuse.

Ingestion

If swallowed, DO NOT INDUCE VOMITING unless directed to do so by medical personnel. CALL A PHYSICIAN OR THE POISON CONTROL CENTER IMMEDIATELY.

If the victim stops breathing: Wipe away any remaining materials off the lips. Clear the airway and administer artificial respiration.

If the victim is conscious: Have the person rinse his/her mouth several times with cold water and spit out. Lean the person forward to reduce risk of aspiration. Have the person drink 8 to 10 oz. of water to dilute. If possible, give a mixture of 2 tablespoons of activated charcoal with water to drink. Repeat administration of water. Keep the person warm and quiet. Never give anything by mouth to an unconscious victim or a person losing consciousness.

Inhalation

Remove the person away from exposure to fresh air. Keep the victim warm and quiet. Support breathing as necessary. Administer cardiopulmonary resuscitation if pulse has stopped. Get medical attention immediately.

Note To Physician

Inhalation of high concentrations of this product, as could occur in enclosed spaces or during deliberate abuse, may be associated with cardiac arrhythmias. This material is an aspiration hazard. The potential danger from aspiration must be weighed against possible oral toxicity.

5. Fire Fighting Measures

Fire And Explosion Hazards

FLAMMABLE. DO NOT USE NEAR FIRE OR FLAME. Vapor may cause flash fire.

Vapors may accumulate in confined spaces (e.g., pits, sumps, sewers) and inadequately ventilated areas. Vapors may travel to areas (rooms) away from worksite before igniting/flashing back to vapor source.

Do not reuse container. Keep away from heat, sparks, open flame and other ignition sources. In the presence of an ignition source, containers containing residual flammable vapors may explode causing serious injury or death. Do not cut open or apply heat sources to containers.

5. Fire Fighting Measures - Continued

Extinguishing Media

Fire-fighting foam, carbon dioxide, dry chemical. Water spray may be used to cool fire exposed containers.

Fire Fighting Instructions

Fire fighters should wear self-contained breathing apparatus and full protective gear. Avoid breathing vapors, gases and fumes. If safe to do so, shut off all gas pilot lights and electrical (spark or hot-wire) igniters and other sources of ignition. Water can be used to cool and protect exposed material.

6. Accidental Release Measures

Eliminate all ignition sources. Provide maximum dilution or explosion-proof exhaust ventilation. Avoid release to the environment. For large spills, use fire fighting foam or water spray to disperse vapors.

Use appropriate personal protective equipment. Contain and pickup spilled material using spark-resistant tools. Absorb any residual solvent with inert material (e.g. sand, vermiculite) or other flammable solvent absorbing materials. Collect and dispose using approved waste containers.

7. Handling And Storage

Handling And Storage Precautions

Keep out of reach of children. Keep containers tightly closed. Use only with adequate ventilation. Keep away from heat, sparks, flame, and other sources of ignition (i.e., pilot lights, electric motors, and static electricity). Protect from temperature extremes and direct sunlight. Do not reuse or cut open empty containers.

Avoid exposure to vapor. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling.

Work/Hygienic Practices

Use good personal hygiene. Wash thoroughly with soap and water after handling.

8. Exposure Controls/Personal Protection

Engineering Controls

Use with adequate general and local exhaust ventilation to maintain air concentrations below recognized exposure limits.

Eye/Face Protection

Safety glasses with side shields or goggles.

Skin Protection

Chemical-resistant gloves made of PVA, Teflon or Viton are recommended. Nitrile gloves may also be used for short-term work involving limited contact. Note: PVA should not be used when contact with water is expected. Consult your glove manufacturer for additional chemical resistance information and glove limitations.

Respiratory Protection

None normally required when used with adequate ventilation. In case of inadequate ventilation, use a NIOSH-approved respirator for organic vapors when applying product. A 95-series particulate respirator should be used when filing, grinding, or sanding.

Engineering controls should be implemented preferentially to reduce exposures. The level of respiratory protection needed should be based on the required protection factor after evaluating chemical exposures using appropriate industrial hygiene monitoring and/or OSHA guidance. Use self-contained breathing apparatus (SCBA) for fires and large spill cleanup.

Ingredient(s) - Exposure Limits

POWDERED ALUMINUM

ACGIH TLV-TWA: 10 mg/m3

OSHA PEL-TWA: 15 mg/m3 (total dust)

8. Exposure Controls/Personal Protection - Continued

Ingredient(s) - Exposure Limits - Continued

OSHA PEL-TWA: 5 mg/m3 (respirable dust)

ETHYL BENZENE
- ACGIH TLV-TWA: 100 ppm
- ACGIH TLV-STEL: 125 ppm
- OSHA PEL-TWA: 100 ppm

METHYL ETHYL KETONE
- ACGIH TLV-TWA: 200 ppm
- ACGIH TLV-STEL: 300 ppm
- OSHA PEL-TWA: 200 ppm

SILICA, AMORPHOUS FUSED
- ACGIH TLV-TWA: 0.1 mg/m3
- OSHA PEL-TWA: 30 / (%SiO2 + 2) mg/m3 (total dust)
- OSHA PEL-TWA: 10 / (%SiO2 + 2) mg/m3 (respirable dust)

TOLUENE
- ACGIH TLV-TWA: 50 ppm (Skin)
- OSHA PEL-CEILING: 300 ppm
- OSHA PEL-PEAK: 500 ppm (10-min)
- OSHA PEL-TWA: 200 ppm

XYLENE
- ACGIH TLV-TWA: 100 ppm
- ACGIH TLV-STEL: 150 ppm
- OSHA PEL-TWA 100 ppm

9. Physical And Chemical Properties

Appearance

A gray or aluminum-gray colored semi-solid

Odor

A characteristic aromatic solvent odor

Chemical Type: Mixture
Physical State: Liquid
Boiling Point: 175 to 231 °F
Specific Gravity: 1.77 g/ml (14.75 lbs/gal)
Percent Volatiles: 27
Percent VOCs: 12.5
Vapor Density: > 1
Solubility: negligible to slight in water
Viscosity: > 1,000,000 CPS
Evaporation Rate: slower than ethyl ether

10. Stability And Reactivity

Stability: Stable
Hazardous Polymerization: Will Not Occur

Conditions To Avoid (Stability)

Avoid contact with heat, spark, open flame or other source of ignition. Do not reuse or cut open empty container.

Incompatible Materials

Avoid contact with strong oxidizing agents (e.g., sulfuric acid, nitric acid), reducing agents, acids, alkalis and aliphatic amines. May attack some rubber and plastics.

10. Stability And Reactivity - Continued

Hazardous Decomposition Products

Thermal oxidation (i.e., "burning") may produce decomposition products of carbon and nitrogen. Burning at extreme temperatures may produce oxides of aluminum and zinc.

11. Toxicological Information

Subchronic (Target Organ Effects)

Long-term exposures may be harmful to the nervous system, lungs, kidneys, liver, heart and blood.

A link between aluminum exposure and neurological diseases, such as Alzheimer's disease, has been suggested.

Chronic/Carcinogenicity

Neither the product overall nor any of its ingredients are known to be listed as potentially carcinogenic by NTP, IARC, OSHA or ACGIH.

Teratogenicity (Birth Defects)

Components of this product have been toxic to the embryo and fetus of laboratory animals at doses toxic to the mother, and have caused birth defects when dosed orally. The significance of animal data to human exposure is unknown. Prolonged intentional abuse of toluene during pregnancy can cause birth defects in humans.

Human studies have also suggested a link between exposure to organic solvents (including xylene) with increased occurrence of miscarriages or birth defects in children. However, in the majority of cases, there was simultaneous exposure to a variety of solvents.

Reproductive Effects

Disruption of menstrual function has been reported from exposure to toluene.

12. Ecological Information

Protect from drains, sewers, and waterways. Product may be moderately toxic to aquatic organisms on an acute basis.

13. Disposal Considerations

Dispose in accordance with applicable federal, state and local government regulations. Dispose of unused or spill cleanup material as hazardous waste. Do not reuse empty containers.

RCRA Information

Waste may meet the RCRA Ignitable characteristic - DOO1.

14. Transport Information

Proper Shipping Name

Paint (Limit Quantity ORM-D)

Hazard Class

3

DOT Identification Number

UN1263

DOT Shipping Label

Flammable

Certain quantities of the product packaged for ground transportation may qualify for categorization under Consumer Commodity ORM-D and/or Limited Quantity exemptions. Consult the manufacturer and/or DOT regulations.

TDG - Canada (Pictograms)

15. Regulatory Information

SARA Hazard Classes

Acute Health Hazard
Chronic Health Hazard
Fire Hazard

Ingredient(s) - U.S. Regulatory Information

POWDERED ALUMINUM
SARA Title III - Section 313 Form "R"/TRI Reportable Chemical
ETHYL BENZENE
SARA Title III - Section 313 Form "R"/TRI Reportable Chemical
METHYL ETHYL KETONE
SARA Title III - Section 313 Form "R"/TRI Reportable Chemical
TOLUENE
SARA Title III - Section 313 Form "R"/TRI Reportable Chemical
XYLENE
SARA Title III - Section 313 Form "R"/TRI Reportable Chemical
ZINC POWDER
SARA Title III - Section 313 Form "R"/TRI Reportable Chemical

State Regulations

WARNING: This product contains a chemical known to the State of California to cause cancer and birth defects, or other reproductive harm.

Ingredient(s) - State Regulations

POWDERED ALUMINUM
New Jersey - Workplace Hazard
New Jersey - Environmental Hazard
Pennsylvania - Workplace Hazard
Pennsylvania - Environmental Hazard
Massachusetts - Hazardous Substance
New York City - Hazardous Substance
ETHYL BENZENE
New Jersey - Workplace Hazard
New Jersey - Environmental Hazard
New Jersey - Special Hazard
Pennsylvania - Workplace Hazard
Pennsylvania - Environmental Hazard
Massachusetts - Hazardous Substance
New York City - Hazardous Substance
METHYL ETHYL KETONE
New Jersey - Workplace Hazard
New Jersey - Environmental Hazard
New Jersey - Special Hazard
Pennsylvania - Workplace Hazard
Pennsylvania - Environmental Hazard
Massachusetts - Hazardous Substance
New York City - Hazardous Substance
SILICA, AMORPHOUS FUSED

15. Regulatory Information - Continued

Ingredient(s) - State Regulations - Continued

New Jersey - Workplace Hazard
Massachusetts - Hazardous Substance

TOLUENE
New Jersey - Workplace Hazard
New Jersey - Environmental Hazard
New Jersey - Special Hazard
Pennsylvania - Workplace Hazard
Pennsylvania - Environmental Hazard
California - Proposition 65
Massachusetts - Hazardous Substance
New York City - Hazardous Substance

XYLENE
New Jersey - Workplace Hazard
New Jersey - Environmental Hazard
New Jersey - Special Hazard
Pennsylvania - Workplace Hazard
Pennsylvania - Environmental Hazard
Massachusetts - Hazardous Substance
New York City - Hazardous Substance

ZINC POWDER
New Jersey - Workplace Hazard
New Jersey - Environmental Hazard
Pennsylvania - Workplace Hazard
Pennsylvania - Environmental Hazard
Massachusetts - Hazardous Substance
New York City - Hazardous Substance

Canadian Regulatory Information

Class B2 - Division 2: Flammable Liquid
Class D2 - Division 2: Materials Causing Other Toxic Effects

Ingredient(s) - Canadian Regulatory Information

ETHYL BENZENE
WHMIS - Ingredient Disclosure List

METHYL ETHYL KETONE
WHMIS - Ingredient Disclosure List

SILICA, AMORPHOUS FUSED
WHMIS - Ingredient Disclosure List

TOLUENE
WHMIS - Ingredient Disclosure List

XYLENE
WHMIS - Ingredient Disclosure List

European Union (EU) Regulatory Information

European Union Risk Phrases -
R11 - Highly Flammable
R36/37/38 - Irritating to skin, eye and respiratory system

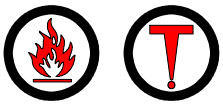
European Union Safety Phrases -
S2 - Keep out of reach of children
S7 - Keep container tightly closed

15. Regulatory Information - Continued

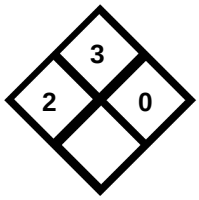
European Union (EU) Regulatory Information - Continued

S9 - Keep container in a well-ventilated place
S16 - Keep away from sources of ignition - no smoking
S29 - Do not empty into drains
S33 - Take precautionary measures against static discharges
S51 - Use only in well ventilated areas

WHMIS - Canada (Pictograms)



NFPA



HMIS

HEALTH	2
FLAMMABILITY	3
REACTIVITY	0
PERSONAL PROTECTION	B

16. Other Information

Reference Documentation

The following were the primary references used in the creation of this MSDS:

* U.S. National Library of Medicine Hazardous Substance Databank (HSDB) - aluminum, zinc, silicon dioxide, toluene, xylene, methyl ethyl ketone, ethyl benzene
* Canadian Centre for Occupational Health & Safety (CCINFO) MSDS Database - aluminum, zinc, fused silica, toluene, xylene, methyl ethyl ketone, ethyl benzene
* Guide to Occupational Exposure Values, ACGIH 2002
* Quick Selection Guide to Chemical Protective Clothing
* Fire Protection Guide on Hazardous Materials
* Rapid Guide to Chemical Incompatibilities, 1997
* Toluene MSDS (Ashland, 8/3/99)

Disclaimer

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Alvin Products, Inc.