

# Hi-TEMP Lab-metal®

for metal  
repairs to  
1000°F.



## Hi-Temp Lab-metal Data

### Easy to use

Hi-Temp Lab-metal is applied directly from the can with a putty knife or similar tool. No two-component mixing or measuring is necessary. Many applications may be made from a single can. After each use, to prevent Hi-Temp Lab-metal from hardening in the can, pour a small amount of **Lab-solvent** over the remaining Hi-Temp Lab-metal contents, then cover tightly. (Stir the Lab-solvent into the Hi-Temp Lab-metal before using again).

### Durable

Hi-Temp Lab-metal adheres permanently to any clean and dry metal, wood, hard plastic, glass, plaster, or porcelain surface. Its strong bond withstands vibration and other difficult conditions. Once hardened (see drying time), it can be machined, ground, filed, and sanded. Buffed to a satin smooth finish, Hi-Temp Lab-metal leaves an undetectable repair. Hi-Temp Lab-metal is impervious to the attack of rust, rot, and mildew. It is not affected by varying climatic conditions, and the hardened metal can be coated with either powder or liquid coatings.

### Preparation

Hi-Temp Lab-metal must be stirred thoroughly before use. No additive is needed; the repair compound hardens upon exposure to air. Hi-Temp Lab-metal is a viscous but easily spreadable paste. Upon opening the can, if the Hi-Temp Lab-metal appears stiff, stir in a capful or two of Lab-solvent to restore the product to its appropriate consistency. For any application, the surface must be clean and dry; free of paint, oil and dirt. Lab-solvent is the recommended surface cleaner. Roughen the surface for superior adhesion.

### Application

Hi-Temp Lab-metal may be applied with a putty knife, spatula, trowel, caulking gun, or squeegee. When filling deep holes or cavities, the putty should be applied in thin layers, less than 1/4" thick. Allow each layer to dry for at least 24 hours at room temperature, and heat harden prior to each additional coat. To apply Hi-Temp Lab-metal with a point brush, it must be thinned to paint consistency with Lab-solvent, then applied with light brush strokes; not worked over as with paint. Dip the brush into Lab-solvent periodically to keep the bristles free and prevent clogging.

### Drying time

Depth of application determines drying time; hardening occurs by exposure to air. Apply no thicker than 1/4 inch per application. The application must air dry for at least 24 hours, or until the product has hardened to a metal state. It must then be heat cured (before applying a second coat). To heat cure:

After fully hardened, **Hi-Temp Lab-metal must be heat hardened by exposing it to a minimum temperature of 425°F for one hour.** (The curing process may be achieved by a more gradual "heat-up", as in the repair of an industrial oven. In this case, as the oven is heating, the Hi-Temp Lab-metal repair is curing.) Heat hardening must be completed prior to powder coating.

### Suggested uses

Hi-Temp Lab-metal is recommended where original Lab-metal may not withstand the extreme heat. Originally developed to meet foundries' core box repair needs, industries such as metalworking, powder coating, welding, fabricating, heating, construction, auto repair, die casting, mold refinishing, and sheet metal production and finishing now rely upon Hi-Temp Lab-metal.



Before and After: Hi-Temp Lab-metal was used to patch cast iron lion statues in an historic restoration project.

### Hi-Temp Lab-metal repairs:

- duct work
- radiators
- foundry core boxes
- molds for plastic
- mufflers, exhaust systems, engines
- wood and coal burning stoves
- grill housings, industrial ovens
- dented or damaged metal, prior to powder coating (when regular Lab-metal cannot be used)

### Shelf life

Hi-Temp Lab-metal has a guaranteed shelf life of one year in the factory-sealed can. Add Lab-solvent (as instructed) to extend storage time. Store in a cool place.



Please review Material Safety Data Sheet before use.

## Industries Using Lab-metal

Lab-metal repair and finishing compound, "the original metal putty," fixes and protects virtually any worn or damaged surface. Lab-metal was developed as an economical, convenient way to repair, refurbish, seal, coat and protect equipment, machinery, vehicles, and industrial products. Application photos available at [www.AlvinProducts.com](http://www.AlvinProducts.com). Some of the many industries currently using Lab-metal include:

- plants and factories
- plating shops
- machine shops
- do-it-yourselfers
- garages and shops (automotive, equipment)
- welding, fabricating, metalworking and ornamental metal industries
- construction: building, heavy equipment, machinery
- transportation: automotive, rail car, bus, truck
- plumbing, heating, ventilation, a/c, refrigeration
- foundries, pattern shops
- powder coaters
- OEMs
- shipyards, marinas, boatyards

## ALVIN LINE



**Lab-metal:** In 12 oz.; 24 oz.; 48 oz.; gallon and 5-gallon containers, and a 20 oz. caulking tube.

**Hi-Temp Lab-metal:** Available in 14 oz. and 24 oz. containers.

**Lab-solvent:** Thinner and metal cleaner. Thins Lab-metal and Hi-Temp Lab-metal for brush and spray applications. Cleans surfaces and promotes adhesion of Lab-metal and Hi-Temp Lab-metal. Lab-solvent protects the unused contents of Alvin repair putties – add a capful to the unused Lab-metal and cover tightly after use. In pint, gallon and 5-gallon containers.

**Heat Block:** Heat-sink. A safe, cost-saving heat absorbing paste. Easy to use, non-toxic, protects against heat damage. Prevents unwanted heat transfer during welding, soldering, brazing and other heat treatment. Used in the welding, automotive, plumbing, shipyard, HVACR, and other specialized industries. In pint, quart, gallon and 5-gallon containers.

**Galvax:** Zinc-rich cold galvanizing compound. In aerosol and gallon containers.

**Alvin Products is a division of Dampney Company, Inc.,** manufacturer of specialty paints and high temperature protective coatings.



# Lab-metal®

The original  
metal putty from  
Alvin Products.

Ready-to-use repair and  
patching compound spreads  
like paste and hardens  
quickly into metal. Fills and  
patches dents and flaws  
easily and economically.

Used by industry since 1950.



# ALVIN PRODUCTS

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## Dampney Protective Coatings

## Lab-metal Data

### Easy to use

Lab-metal is a powdered aluminum containing dent and body filler applied directly from the can with a putty knife or similar tool. No two-component mixing or measuring is necessary, therefore there is no waste. Heat, special tools, and specialized skill are not necessary. Many applications may be made from a single can, simply add a capful of Lab-solvent and cover tightly before storing.

Lab-metal may also be thinned to paint consistency with Lab-solvent and brushed or sprayed on practically any surface – including wood and cement – to provide a rustproof, water resistant, hard metal finish.



Hi-Temp Lab-metal (withstands temp's to 1000°F), Lab-solvent (thinner, metal cleaner), and Lab-metal (for repairs to 350°F or one-time exposures to 425°F).

### Bonds permanently

Lab-metal adheres permanently to any clean and dry metal, wood, hard plastic, glass, plaster, or porcelain surface. Its strong bond withstands vibration and other difficult conditions.

Lab-metal hardens quickly without heat, providing a durable metal surface. Drying time is dependent upon the depth of application (see 'drying time' section).

### Durable

Once hardened, Lab-metal can be milled, chiseled, drilled, sawed, tapped, machined, ground, sanded and filed. Under normal conditions, it will not shrink, chip, crack or peel, and may be sanded to a feather edge, providing a smooth, undetectable repair.

Lab-metal is aluminum-filled, and therefore impervious to the attack of rust, rot and mildew. The hardened metal putty is not affected by varying climatic conditions, mild acids, gasoline, oil, or petroleum solvents. It is affected by alkalis and chemical solvents, but only after extensive immersion.

Lab-metal withstands temperatures as high as 350°F (or one-time exposures to 425°F for as long as 20 minutes), and can be painted with lacquer or enamel without danger of bubbling, lifting paint, chipping or peeling. It also withstands

powder and liquid paint baking procedures. Hi-Temp Lab-metal is also available for applications subject to temperatures as high as 1000°F (such as powder coating and engine repair applications).

### Efficient, economical

Lab-metal's true metal hardness is achieved with greater ease than other materials sold for repair and finishing. Lab-metal sells for considerably less than epoxy systems. Its strength, hardness, durability, and abrasion resistance surpass basic requirements for fillers set by the nation's largest metalworking plants. Lab-metal is the repair putty of choice because of its extensive can life, ready-to-use formulation, versatility of applications, and durability.

## Proper Use

### Preparation

Lab-metal should be stirred thoroughly before use. No heat or additive is necessary to complete the bond. It hardens simply by exposure to air. Upon opening the can, if Lab-metal appears stiff, add a capful or two of Lab-solvent to restore the product to its appropriate consistency. Lab-metal is not intended to be used as an adhesive.

### Surface preparation

Whether spreading, brushing or spraying Lab-metal onto the desired surface, good adhesion requires only that the surface be dry and clean. (Use Lab-solvent to clean the surface.) It should be free of paint, oil, dirt, and any extraneous materials. A slight roughening of the surface provides an even better bond.

### Application

Lab-metal's unique formulation allows for three methods of application: spreading, brushing or spraying. Instructions for each of the three methods follow:



Lab-metal spreads like paste and hardens into metal. Application tip: wet the applicator with Lab-solvent to aid in smoothing the Lab-metal and reduce "pulling".

### Spreading Lab-metal, to fill holes and depressions, or to rebuild worn surfaces:

Lab-metal is easily applied with a putty knife, spatula, trowel, caulking gun, or flexible squeegee. When filling deep holes or cavities, apply Lab-metal in thin laminations, allowing each to dry before applying the next. For vertical or overhead applications, pour the required amount into an open container and stir. This permits some evaporation of the solvent, rendering the Lab-metal less fluid and reducing the possibility of sagging.

For both brushing and spraying Lab-metal, it must be thinned to paint consistency with Lab-solvent. One part Lab-metal to one part Lab-solvent provides a good brushing consistency. Add more Lab-solvent for spraying.



**Brush painting Lab-metal, as a primer surface or to provide a tough metal coat:** Pour Lab-solvent into a wide-mouth container such as a clean paint pail. As painting with the thinned Lab-metal proceeds, dipping the brush into the Lab-solvent periodically keeps the bristles free and prevents clogging. Apply the thinned Lab-metal with light brush strokes; do not work over as with paint.



**Spray painting Lab-metal, to rustproof large surface areas:** An internal mix spray head should be used, set at roughly 65 pounds of air pressure to eliminate clogging. For larger quantities, an agitator tank should be used (consult spray equipment dealer). Clean the gun thoroughly with Lab-solvent immediately after use. When applying Lab-metal in closed areas (such as tank interiors), proper ventilation must be provided and NIOSH approved self-contained breathing apparatus should be used. Any striking of metal on metal that could cause sparks must be avoided.

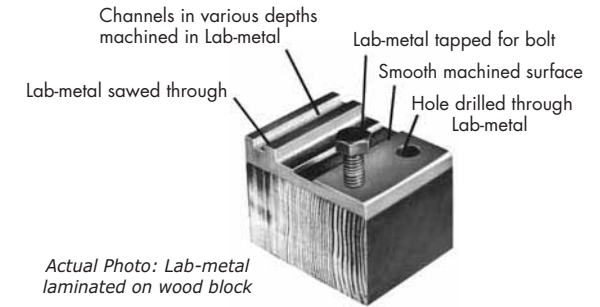


Lab-metal is applied with a putty knife to finish a rough weld. The hardened Lab-metal is then sanded smooth, providing a paintable, permanent metal finish.

### Drying time

Brush and spray applications dry very quickly. Otherwise, the depth of application determines drying time. Lab-metal hardens as the diluents evaporate. Under ordinary conditions, a 1/16" application will harden in one to two hours. A 1/8" application will harden in three to four hours. Drying time can be accelerated by the careful use of infrared lamps.

For deep pits or holes, laminate Lab-metal in successive layers (no thicker than 3/8" per layer), and allow to completely harden before building up. This will speed the process and give the most satisfactory results.



Actual Photo: Lab-metal laminated on wood block

## Technical Data

**Description:** Ready-to-use aluminum filled repair and patching compound. Single component dent and body filler.

**Color:** Metal gray. Aluminum when buffed.

**Adhesion:** Excellent adhesion to clean, dry surfaces of metal (aluminum, steel, stainless, brass, bronze, cast iron, copper, lead), wood, hard plastic, and glass. **Lab-metal will not bond two parts together;** it requires air in order to dry.

**Hardness:** 81 on Shore D scale

**Coefficient of Linear Expansion:** 15 x 10<sup>-6</sup> inch/inch per °F

**Strength:** Tensile: 650 lbs./square inch  
Compressive: Approx. 20,000 psi  
Water pressure: 50 psi

**Specific gravity:** 1.95 at 75°F

**Weight:** (Cubic inch): 31.2 grams or 1.10 oz.

**Heat resistance:** When dry and hard, withstands temperatures to 350°F and is not affected by cold to -40°F. Withstands single exposure to 425°F for no longer than 20 minutes.

**Chemical resistance:** Not affected by mild acids, gasoline, petroleum, petroleum solvents, oil or L.P. gas. Alkalis will attack Lab-metal slowly, but only after extensive immersion.

**Combustibility:** Dry and hard material will not support combustion.

**Conductivity:** A nonconductor at normal voltage. Not considered an insulator. Accepts ground for powder coating.

**Thermal conductivity:** Est. 1-2 BTU per sq. ft., per hr., per °F.

**Mechanical properties:** Strong and durable. Can be milled, sawed, drilled, tapped, sanded, ground, filed. Does not shrink, chip, crack or peel, and is easily feather edged.

**Shelf life:** Two years in factory-sealed can. For extended storage, add Lab-solvent as instructed. Store in a cool place. (Hi-Temp Lab-metal has a one-year shelf life.)

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