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Technical Data Sheet

Peppers T1000 Compound

Peppers T1000 Compound is a hand-mixable, UL-approved, epoxy putty sealing compound that mixes easily within minutes and hardens in one hour to provide water, dust and vapour-tight seals for cable fittings and electrical connectors. It is supplied in a sealed foil wrapper which contains a putty like stick with the curing agent encapsulating the contrasting colour base material. Its dough like consistency eliminates drips and runs for a “no mess” application with no tools required for use. T1000 Compound cures to a rigid pale yellow material that is resistant to many chemicals. (See Chemical Resistance). Its other benefits are no shrinkage or high exothermic reaction. It does not adhere to polyethylene, polypropylene or PTFE. To the best of our knowledge it is not, and cannot be used as an explosive.

Applicable Standards

Peppers T1000 Compound complies with the UL requirements of sealing compounds for Class I, Groups A, B, C and D; Class II, Groups E, F and G, in cable sealing fittings or lead seals for use in hazardous locations. The UL File reference is E334661. The product complies with the requirements of Class I and Class II following exposure to acetone, ammonium hydroxide, ethyl acetate, acetic acid, ASTM Reference Fuel C, benzene, n-hexane, furfural, 2-nitropropane, methanol, Methylethyl ketone, ethylenedichloride and diethylether.

How to Use

It is important to follow the instructions supplied with the cable gland kit. In general to achieve optimum adhesion, surfaces must be clean and free of oil, grease, or dirt. The kit is supplied with sufficient compound with a small amount left over. To mix, knead with fingers to a uniform light yellow colour. If mixing is difficult when cold, warm the compound to room temperature or slightly above. After proper mixing, compound can be forced into the area between conductors and cable armour to form an effective seal when assembled as per instructions. Damming is not required. Once mixed it has about 30 to 40 minutes to be used. Force the compound into fittings and assemble as instructed. Once assembled remove excess material before hardening begins. After 45 to 60 minutes the epoxy will harden and start to form a bond with the conductors. After about an hour the assembly can be inspected. Equipment can be returned to service after 4 hours and full cure is achieved in 24 hours.

Health Precautions

It is recommended that the product Safety Data Sheet is downloaded from our website for further advice. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS] (Skin Irritation. 2, H315) (Eye Irritation. 2, H319) (Skin Sensitivity. 1, H317) (Aquatic Chronic 3, H412).

Other

The T1000 Compound has stated a use by date of two years from date of shipment if stored in temperatures 22°C or below. After this time period the compound will begin to alter away from operational specification and its performance will diminish over time. Storage significantly above this temperature for long periods will reduce workable shelf life. It is recommended that the product is stored in the original packaging, in a dry area. If the T1000 Compound passes its use by date it should be safely disposed of according to local regulations and new compound purchased. T1000 Compound is available in 22mm dia x 25mm (16gm), 22mm dia x 50mm (33gm) and 22mm dia x 150mm (98gm) stick lengths.

Technical Information

Properties	Results
Work life	45 to 60 minutes
Hardness, Shore D (full cure for 24 hours)	65 – 75
Lap shear tensile strength on steel (1 x 1" x 1/16") "	300 lbs.
Non-volatile content	100%
Compressive strength	8,000 psi

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Dimensional change, solvent vapour exposure	0 to 3%
Electrical resistance	30,000 megohms
Dielectric strength at 0.25 in.	300 volts/mil
Shrinkage	<1%
Maximum Continuous Operating Temperature	155°C (311°F) [2]
Low Temperature Use	-60°C (-76°F) [2]

[2] When used within Peppers CR-**** & UL-*** Barrier Glands for use in IEC installations the compound has been independently tested and approved for use at a temperature range between -60°C & +135°C.

Peppers T1000 Compound - Chemical Resistance

The compound used within the range of barrier cable glands is a cured epoxy putty. When fully cured the compound is highly resistant to corrosion or deterioration by dilute acids and caustics and will also withstand the influence of mildly acidic water.

SOLVENTS

Normal temperature exposure to the following solvents has no effect or minor effect on the cured compound: -

Alcohols (e.g., methyl, ethyl, isopropyl, butyl)
Antifreeze
Cellosolves
Chlorinated solvents, saturated (limited)
Esters (e.g., amyl acetate)
Greases
Lacquers and lacquer thinner
Methylene chloride
Mineral spirits
Naphtha
Natural oils, e.g., linseed, olive, palm
Oils and fuels, including diesel oil, fuel oil, gasoline, jet fuel, lubricating oil and silicone oil
Methylene chloride
Mineral spirits
Paint thinner
Shellac
Toluene
Trichloroethane
Turpentine
Xylene

CAUSTICS

Normal temperature exposure to the following caustics has no effect or minor effect on the cured compound: -

Chlorine bleach (dilute)
Caustic potash
Hydrogen peroxide
Salt solutions, including alum, calcium chloride and salt
Soap and soap solutions

Hot or strongly concentrated exposure to the following caustics has moderate or severe effect on cured epoxy putties: -

Bromine
Caustic potash (hot)
Chlorine
Chromate solutions
Hydrogen peroxide (hot)
Hypochlorite bleach (concentrated or hot)
Oxidizing agents
Sodium peroxide
Soap and soap solutions
Oleum
Plating solutions

ACIDS

Normal temperature exposure to the following dilute acids has no effect or minor effect on the cured compound: -

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Hot or strongly concentrated exposure to the following solvents has a moderate or severe effect on the cured compound: -	Acetic
Acetone	Muriatic
Esters (hot)	Nitric
Methylethyl ketone (MEK)	
	Hot or strongly concentrated exposure to the following caustics has a moderate or severe effect on the cured compound: -
	Acetic

MISCELLANEOUS

The following have no effect or minor effect on the cured compound: -	Aqua regia
Lard	Carbolic
Water	Muriatic
	Nitric
	Sulphuric

FREQUENTLY ASKED QUESTIONS

Is Peppers T1000 Compound safe to use?

Peppers T1000 Compound is as safe to use as other epoxy adhesives and putties found in retail stores. Epoxy resins are skin and eye irritants and known sensitizers. Direct skin contact with uncured material may cause an allergic reaction in some individuals. The use of impermeable plastic or rubber gloves when mixing and handling uncured Peppers T1000 Compound is highly recommended. Hands should be washed with soap and water immediately after using. If in the unlikely event that the cured compound is sanded a mask should be worn to protect against the dust generated. This is generic to any fine dust not necessarily specific to the product. The T1000 Safety Data Sheet can be downloaded from our web site which contains full details of Peppers T1000 Compound.

What is the service life of cured Peppers T1000 Compound?

Calculation of tensile strength retention on aging at 24°C (75°F) indicates that cured epoxy putties have a useful lifetime greater than 50 years. They are extremely stable materials and highly resistant to degradation by environmental influences, such as atmospheric moisture, oxygen and sunlight. They are not sensitive to microbial action and will not rot. In contrast to metals like copper, steel, iron and aluminium, epoxies are highly resistant to corrosion or deterioration by dilute acids and caustics and will withstand the influence of mildly acidic water. Epoxy putties contain no volatile ingredients and, therefore, undergo no weight or volume change due to plasticizer evaporation. Because of their stiff, hard character and inherently excellent adhesion to many different materials in conjunction with this outstanding environmental resistance, epoxy putties can easily outlast the materials they are used to seal.

What happens if only part of a Peppers T1000 Compound stick is used? Can the rest of the stick be saved for later application?

Peppers have calculated the approximate amount of compound to be use and there should be only a small amount left over after completing the joint. Any surplus should be safely disposed of.

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How do I dispose of unused compound?

If the compound has been mixed and it has hardened then it can be disposed of as general waste as it is inert. If the stick is not mixed then it should be disposed of as a hazardous waste in accordance with local regulation.

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