



SPECIFICATIONS: PolyMaster Plastic Foam

R-501TF

UST FOAM-IN-PLACE CLOSURE

EPA Deadline

On December 22, 1998, the U.S. Environmental Protection Agency, EPA, mandated that all existing underground storage tank (UST) systems comply with one of three alternatives that included (1) compliance with "new" UST standards; (2) upgrading of existing tank systems, or (3) closure. Today, UST systems that are taken out of service must either be abandoned (i.e. closure in place) or removed.

Closure in place requires filling the abandoned tank with an "inert solid material" pursuant to 40 CFR 280.71(b). Often, the materials used to satisfy this requirement have included sand, gravel, or grout (i.e. concrete), which can be expensive and difficult to work with.

Closure using these materials can result in unnecessary costs and add significant risks hazards to the closure process. Bulk filling usually requires partial excavation of the tank and cutting a large opening into the top to install fill material. These activities increase the exposure to tank materials and increase the chances of fire and/or explosion, which can defeat the main purpose of closure in place, which is to leave the area in an undisturbed state. Also, because of the weight of conventional materials future removal of large tanks is technically infeasible.

UST Abandonment Using PolyMaster R-501TF Plastic Foam

PolyMaster brand foams offer a cost effective and light weight alternative for UST closure in place. PolyMaster's unique dry resin greatly reduces material handling and shipping costs. Because materials are mixed as needed with locally supplied water, consistent foam quality is assured time after time.

R-501TF Plastic Foam is a second-generation low-VOC resin that produces a light weight solid material which is inert, non-toxic, non-corrosive, and fire resistant. In addition, PolyMaster foam provides unique absorbent properties for a wide range of aliphatic and aromatic compounds often found as residuals in USTs. PolyMaster 501-TF fully meets the specifications set forth in 40 CFR 280.71(b)

The major benefits of this alternative are safety, low cost, and ease of application, which make R-501TF foam a preferred close-in-place system. Tanks and delivery lines can also be filled using existing service ports, eliminating the need for excavation and hot work next to the abandoned tank. Our pressure-filling process eliminates all voids in the system providing safe and permanent closure under EPA and state guidelines.

Advantages of Foam-in-Place Closure

- ☑ **Low cost of materials**
- ☑ **Reduced time and labor**
- ☑ **Does not disturb surface or structures**
- ☑ **Increased safety for workers / customers**
- ☑ **Less interruption of service compared to UST removal**
- ☑ **Permits easy and safe removal of UST if necessary in future**
- ☑ **Attendant piping can be closed in place**

Environmentally Green

PolyMaster R-501 TF is an environmentally safe organic polymer resin. The finished foam is inert, non-toxic, non-flammable, and contains no solvents, VOCs, toxic metals, or petrochemicals, making it safe for land-fill disposal.

About InsulMaster, Corp.

InsulMaster is the sole North American service organization for R-501 and R-501TF Plastic Foam and is an industry leader in commercial and industrial insulation.

Contact us at **1-800-580 / FOAM**, or visit our website: **www.polymaster.com**.

Tank Volumes and PolyMaster R-501 TF Material Requirements

Tank Size in Gallons	Approximate Volume (cubic feet)	Approximate Volume (cubic yards)	Approximate Weight of Foam (pounds)	Number of R-501 TF Sets
500	67	2.5	134-167	(5-tanks/set)
1,000	134	5.0	268-335	(2.5-tanks/set)
2,000	267	10	534-667	(1.25-tanks/set)
5,000	668	25	1,336-1,670	2.0 sets
10,000	1,336	50	2,672-3,340	4.0 sets
15,000	2,005	75	4,010-5,012	6.0 sets
20,000	2,674	100	5,348-6,685	8.0 sets
50,000	6,684	250	13,368-16,710	20 sets



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Environmental Applications for PolyMaster R-501 TF Plastic Foam

Municipal Landfill Capping

Landfill capping provides an economical alternative to the daily use of a 6-inch soil cover needed to protect the landfill surfaces from water and vector infiltration, and to control odors. A major benefit is an estimated 10-15 % gain in usable landfill volume resulting from application of compressible and degradable foam instead of non-compressible soil.

Pipe and Vessel Stabilization

R-501 foams can be used to stabilize piping systems prior to removal to isolate potentially hazardous scales and residue. When stabilized, pipe can be cut mechanically or with a cutting torch with little disruption of the foam and embedded scale. Advantages include verifiable closure of decommissioned systems and positive displacement of potentially explosive atmospheres that can accumulate in empty piping systems and vessels.

With an R-value of 4.5 per inch, or greater, foam makes an excellent insulating media for pipe chases and inner-wall installations that cannot be encapsulated by conventional means.

Pesticide Carrier / Application Aid

Because many pesticides in use today are water-soluble, the use of the water-soluble R-501 plastic foam to generate a solid pesticide/foam matrix, can be applicable to a wide variety of pesticides where incorporation of pesticides into an inert solid matrix is desirable. The 80% closed-cell structure of the foam will help ensure that active materials will stay where they have been placed. For example, R-501 Foam can be used as a carrier for sodium borate compounds, which can provide effective control of termites. Direct incorporation of pesticides into the foam by a licensed applicator offers a uniformly treated insulation material that can provide both a physical and chemical barrier to unwanted pests.

Fire Suppression

R-501 foam has a Class 1 fire rating based on its low flame propagation rate. The R-501 foam has been effectively used to put out mine fires by physically sealing off the mine shafts supplying oxygen sources to the fire. Passive fire suppression can be easily performed by evaluating a facility, and simply filling un-manned areas with foam where explosive atmospheres are likely to accumulate. Foam can be easily removed if building use patterns change

Packaging and Transportation

The light weight of R-501 foam (0.75 lbs/cu/ft), inertness, and a low flame propagation rates make the R-501 foam an excellent packaging aid for shipping of hazardous materials and wastes. Because the material is super-absorbent, biodegradable, and resistant to attack from petroleum hydrocarbons (i.e. solvents) it offers a good substitute for styrofoam.

Dust Control for Hazardous and Radioactive Materials

Aqueous-based R-501 resin is an excellent medium for dust control and can suspend hazardous particulate material in a solid foam matrix. Introduction of non-combustible foam during activities such as surface scabbling can effectively encapsulate generated dusts that are potentially hazardous or radioactive. When cured, foam is easily handled and does not introduce additional hazards to worker health or safety. Liquid resin can be spray-applied and forms a glass-like solid that encapsulates loose or removable contamination.

PolyMaster™ Plastic Foam R-501

Specification	Results	Method
Water vapor transmission	25-36 perms/inch	ASTM C355
Surface Flame speed	5 (Class 1)	ASTM E84 / U.L. 723
Fuel contribution	0	ASTM E84 / U.L. 723
Density	2,0-2.5 lbs/cu ft	Bulk weight
Ash content	Trace	DOE 6.2.11
Residue on Ignition	<0.3 %	Standard Methods 2540E
Water absorption (floating)	1.8 %	DOE 6.2.9.1
Electrical resistivity	27,400 ohms	DOE 6.2.3
Compressibility	5 PSI (max)	Estimated (in house testing)
Inertness	Chemically/physically inert	Short term/Long term observations

Consumer Information:

InsulMaster, Corp. hereby disclaims with respect to any materials, products, equipment, inventory, goods or training provided or sold by InsulMaster, Inc. all warranties whether expressed or implied by law or arising from a course of dealing, usage of trade or otherwise, and specially including, but not limited to, the warranties of merchantability and fitness for particular purpose. Under no circumstances. Shall InsulMaster, Corp. or PolyMaster, Inc. Be responsible for any consequential damages of any party to whom InsulMaster has provided any of the items described above, or any party who has used, installed, or otherwise handled such items. No pesticidal claims are made, intended, or inferred by InsulMaster regarding use of its products in conjunction with pest control materials. A licensed pesticide applicator should be consulted prior to use of PolyMaster foam-in-place pesticide application