

Zeston® Heat Transfer Compounds

Description

Zeston Heat Transfer Compounds were developed to provide a thermal bridge wherever external devices such as tracers or plate coils are used to maintain the temperature of material within process pipes or storage vessels. The use of these high quality compounds will greatly improve the efficiency of any tracing or plate coil system by replacing air with a solid compound that has a high thermal conductivity. Since conduction of heat and cold through a solid medium is more effective than by convection through air, more heat or cold is transferred to the pipe or vessel with the use of heat transfer compounds.

With Zeston Heat Transfer Compounds, "R" factors are exceptionally low, ranging from .043 to .086 (hr•ft²•°F)/Btu [0.008 to 0.015 m²•°C/W] (at ¾" [19 mm] thickness). When Zeston Compounds are used around tracer lines and under plate coils, 360° (6.28 rad.) of the tracer or the entire plate coil surface is, in effect, in physical contact with the pipe or vessel via a thermal bridge. Practically all the available heat is transferred to or away from the process equipment by the conductance of a low resistance medium and very little by convection via high resistance air.

A further improvement in performance is achieved from the flexibility inherent in a Zeston installation. Again, with standard installations, maximum performance can only be achieved by situating the bare tracer at the bottom (for heating) or top (for cooling) of the process line. With Zeston Compounds, the tracer can be placed at the most convenient location, which can simplify installation and maintenance, helping to reduce costs. Frequently, less tracer equipment is required, and inspection and maintenance are greatly simplified.

Advantages

Low Cost, Easy Installation. Strap tracer line to process line and simply trowel compound between the pipe and tracer. Tracer can be placed in the most convenient location.

Even Temperature Distribution. No hot or cold spots throughout the process line.

Fast Heat-Up. Utilizes the entire surface of the tracer tubing, conducting all heat to the process line with a minimum of heat loss.

Easily Adaptable. Can be used on cold, hot water and steam tracer or electric MI cable systems and panel coils.

Applications

Any process piping system requiring external heat to maintain product temperature is greatly improved by the use of Zeston Compounds between the steam or hot water tracer pipe and the process line.

Excellent results are obtained when applied on process lines containing molten sulphur, bunker oil, molten waxes, acids, syrups, petroleum oils, asphalt and other viscous liquids and high freezing point materials. Zeston Compounds are also effective in maintaining cold temperatures in chilled liquid process lines and vessels.



Operating Temperature Limits: Sub-Zero to +1250°F (677°C)

Available Grades and Applications

Standard Z-10. Standard Grade Z-10 is used for sub-zero to 800°F (427°C) applications. It is applied to tracer tubing and electric heater MI cable tracing systems on pipes and equipment vessels. The heat transferred by a conventional trace system can be substantially increased using Standard Z-10 around the tracer. Being water soluble, Standard Z-10 should be protected from water while in the mastic state until it has cured into a rock-like mass.

High Temperature Z-30. Grade Z-30 is fine grained and recommended for applications similar to grades Z-10 and Z-20 at process temperatures up to 1250°F (677°C).

Packaging Information

| Grade | Container Size | Container Weight (Approx.) |
|------------------|----------------------------|----------------------------|
| Z-10, Z-20, Z-30 | 1 gallon (3.8 liters) | 14 lbs. (6.4 kgs.) |
| Z-10 | 5 gallons (18.9 liters) | 70 lbs. (31.8 kgs.) |

Physical Properties

| | Grade | |
|-----------------------------------------------------------------------------------------------------------|-------------|-------------|
| | Z-10 | Z-30 |
| Temperature, max. °F (°C) | 800 (427) | 1250 (677) |
| Temperature, min. °F (°C) | Sub-Zero | Sub-Zero |
| Weight per gal., lbs. (kg.) | 14 (6.4) | 13 (5.9) |
| Bond shear strength, psi (kPa) | 225 (1551) | 225 (1551) |
| Thermal conductivity, "k" Btu•in/(hr•ft ² •°F) [W/m•°C] @ 300°F (149°C) mean temperature | 17.5 (2.52) | 17.5 (2.52) |
| Water resistance | No | No |
| Flexible | No | No |
| Thermal shock resistance | Good | Good |
| Shelf life (in unopened containers) | 1 year | 1 year |

Zeston® Heat Transfer Compounds



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The physical and chemical properties of Zeston® Heat Transfer Compounds listed herein represent typical, average values obtained in accordance with accepted test methods and are subject to normal manufacturing variations. They are supplied as a technical service and are subject to change without notice. Numerical flame spread and smoke developed ratings are not intended to reflect hazards presented by these or any other materials under actual fire conditions. Check with the Regional Sales Office nearest you to assure current information. **All Johns Manville products are sold subject to Johns Manville's standard Terms and Conditions including Limited Warranty and Limitation of Remedy. For a copy of the Johns Manville standard Terms and Conditions, Limited Warranty and Limitation of Remedy, and information on other Johns Manville thermal insulations and systems, call (800) 654-3103.**

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