TC Ceramic
Technical Data Sheet

CAPSTONE MFG., LLC

PRODUCT DESCRIPTION

CHEMICAL DESCRIPTION

Single Component, Waterborne Acrylic Polymer with Silicon Microspheres

PRODUCT USAGE

TC Ceramic (previously known as Thermal-Coat) is a liquid insulation, consisting of a mixture of various silicon and ceramic beads blended into a high quality acrylic polymer. ***TC Ceramic*** is designed to provide both thermal and acoustical insulation for a variety of industrial applications, providing an effective, inexpensive alternative to the high cost of typical insulation systems. Due to its excellent reflectivity and emissivity, ***TC Ceramic*** excels at insulating structures and equipment from radiant energy gain. 99% of the radiant energy that comes in contact with ***TC Ceramic*** is either reflected or re-emitted, meaning only 1% of the radiant energy is absorbed. ***TC Ceramic*** also performs very well at protecting personnel from burn hazards on hot or cold structures and equipment. Because it physically adheres to the surface, ***TC Ceramic*** significantly reduces corrosion and rust formation. TC Ceramic is extremely lightweight and pliable, therefore, it expands and contracts with the surface to which it is applied. The use of ***TC Ceramic***, in place of other insulation, reduces both the space and weight for any given structure or piece of equipment.

COLORS

Standard color is white. Special colors available upon request.

PRODUCT CERTIFICATIONS

Passes ASTM C1055-99 standard for protection from burn injuries.

PRODUCT ADVANTAGES

- Excellent radiant reflectivity and emissivity properties – significantly reduces radiant energy gain
- Low thermal conductivity – good conductive insulation properties
- Very good burn safety characteristics – excellent for personnel protection
- Light weight – less weight than other insulations
- Good adhesion – bonds well to a variety of substrates
- Moisture resistant – helps to prevent corrosion and rust formation
- Easy application/installation – installs in much less time than other insulations
- Reduces or eliminates condensation

TYPICAL APPLICATIONS

- Pipe and Valve Insulation
- Tank Insulation
- Roof Coating
- Interior and Exterior Wall Insulation
- Interior and Exterior Ducting

SURFACE PREPARATION

Preparation requirements vary. Contact Capstone Mfg. for assistance.

COATING SYSTEMS

PRIMERS

Steel: self-priming or corrosion resistant primer
Non-Ferrous Metals and Galvanized Steel: self-priming
Concrete: self-priming
Wood: self-priming

TOPCOATS

Acrylic Latex Compatible Systems: not recommended for burn safety applications.

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TECHNICAL DATA

SOLIDS VOLUME 80.5 percent

RECOMMENDED DRY FILM THICKNESS 15-200 mils(0.4mm-5.0mm; 15-30 mils(0.4-0.8mm) per coat, multiple coats required to obtain greater thicknesses. Thickness varies with application. Please consult your designated technical representative for assistance.

DRY TIME (50% R.H.)

Temperature	*Dry To Touch*	*Recoat Time*	*To Normal Use*
75°F	180 min.	12 hrs.	24 hrs.

THEORETICAL COVERAGE ***Spray Application:*** 60 sq. ft/gallon @ 15 mils(0.4mm)

NET WEIGHT PER GALLON ***Wet***: 5.6 pounds(2.54kg)/gallon, ***Dry:*** 3.2 pounds(1.45kg)/gallon

STORAGE TEMPERATURE Minimum 40°F/5°C, Maximum 80°F/26°C; cool storage is recommended

SHELF LIFE 12 months at recommended storage temperatures.

HEALTH AND SAFETY Materials are safe for handling. Consult Material Safety Data Sheet for descriptive handling and safety information.

PHYSICAL PROPERTIES

Cross Hatch Adhesion (ASTM 3359)	100% passed, no failure
Flame Spread (ASTM E84-98)	25
Smoke Developed (ASTM E84-98)	45
Accelerated Aging (ASTM G53), no primer	No discoloration at 200 hours
Brookfield Viscosity, #3 Spindle, 30 rpm	3564 centipoise
Specific Heat (23ºC)	1.1120 W·s/gm·K
Thermal Diffusivity (23ºC)	0.00239 cm^2/sec
Thermal Conductivity (23ºC)	0.00097 W/cm·K 0.0563 Btu/hr·ft·°F
Solar Reflectance (ASTM E903)	0.83
Emittance (ASTM E408-71)	0.94
Service Temperature	Continuous:-40°F/-40°C : 500°F/260°C Maximum Surge: 500°F/260°C

APPLICATION

MIXING Power mix contents of container using a mud paddle at 300 rpm or less for 3-5 minutes, making sure to blend in all solids on top of container.

SURFACE TEMPERATURE Minimum 50°F/10°C, Maximum 300°F/150°C. Coating will not dry below 50°F/10°C Prior to applying to substrates at temperatures greater than 150ºF/68°C, please contact Capstone Mfg. for assistance.

METHODS & EQUIPMENT Apply TC Ceramic on a dry, clean, substrate which is free from oil, grease, wax, dirt, rust or corrosion. Use airless sprayer with 3000 PSI, 1.25 GPM, 28:1 ratio with a .021 tip size. An AR-1 Spray Gun using shop air may be used for small applications. Allow product to completely dry between coats. This is a one-coat system with dry time of 12 hours under room temperature conditions. Elevating temperature of substrate will accelerate recoat time. Brush may be used for touch up, but is not recommended for full application, except for under 500 ft^2. (See Application Specifications & Instructions)

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