HTT 1800

Heat Curable, High Temperature Coating Resin
Product Code: 227789

Clariant
Exactly your chemistry.

Product and Test Information

MANUFACTURER

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FEATURES

- Heat curable
- Withstands temperatures of 1800°C and above
- Low viscosity
- Rapidly solidifies with heat
- Can be blended with pigments
- Heating promotes conversion to ceramic
- Excellent thermal properties

PRODUCT DESCRIPTION

HTT 1800 is a patented liquid polysilazane-based coating resin, specifically designed for use in the formulation of heat curable coatings and are capable of withstanding peak operating temperatures of 1800°F.

HTT 1800 rapidly solidifies upon heating to 175-200°C (350-400°F). Additionally, solidification can be achieved at lower temperatures with the addition of a free radical initiator, such as dicumyl peroxide.

PRODUCT APPLICATIONS

HTT 1800 suggested applications include: automotive engine coatings, gas turbine engine coatings, industrial furnace coatings and a wide variety of high temperature coatings.

HTT 1800 can be blended with a variety of pigments: metal powders (zinc, aluminum, stainless steel), ceramic powders (silicon carbide, aluminum oxide, silicon nitride), or the like.

Pigment compositions can be formulated with or without solvent and can be applied by dripping, spraying or brushing directly onto the substrate.

For ultra-high temperature formulations, the coated part is heated to at least 850°F to promote conversion of the polymer to ceramic. Depending on exact formulation, peak coating temperatures of 1800°F can be achieved.

PACKAGING

HTT 1800 is available in 1 gallon containers, 5 gallon pails and 55 gallon drums. Contact a Sales Representative to determine the packaging required to suit your needs.

TECHNICAL DATA

Appearance:	Clear to pale yellow liquid
% Resin:	100% solids as a liquid
Flash point:	29°C
Density as a liquid:	1.020 g/mL
VOC:	N/A
Viscosity:	80 cps @ 20°C

SOLVENTS

HTT 1800 can be diluted with dry aprotic solvents such as alkanes, aromatic hydrocarbons, ethers, ketones and esters.

HTT 1800 is hydrolytically sensitive and will slowly generate ammonia upon contact with moisture. Reaction will also occur with other protic substances such as acids, bases and alcohols.

CURE CONDITIONS

Depending on the free radical initiator employed, cure from liquid to solid can be accomplished in times ranging from 1 to 90 minutes over a temperature range of 200°F to 400°F. The initiators are typically dissolved in solvent free polymer at the 0.5 to 1.0 wt% level based on the weight of polymer employed. Suggested initiators include: 2,5-dimethyl-2,5-(2-ethylhexanoylperoxy) hexane and dicumyl peroxide.

Cure without the use of initiators can be effected by heating to 350°F to 400°F.

PRYOLYSIS CONDITIONS

Pyrolysis of cured **HTT 1800** results in progressive conversion of the polymer to an amorphous and ultimately crystalline ceramic phase.

SHELF LIFE

HTT 1800 has a shelf life of 2 years for material in the unopened original containers.

Usable life will be determined by the precautions taken to keep containers tightly sealed and protected from moisture.

CLEAN UP

Proper clean-up is essential. Clean tools immediately after use with acetone or mineral spirits followed by soapy water. Cured material cannot be removed with solvent.

HANDLING PRECAUTIONS

May cause lung irritation. Use adequate ventilation. In enclosed areas, respiration equipment is necessary. Avoid contact with skin and eyes. Wear necessary protective equipment. Keep uncured product away from flame, sources of ignition and moisture. Prevent uncured product from coming contact with water. FOR INDUSTRIAL USE ONLY. Refer to MSDS for more information.

TECHNICAL SERVICE

Technical chemists are available to answers any performance, application, removal methods and chemical specifications. Call 800.585.2151 for direct service.

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