

TDS HC100 Thermal Curing Impregnation Sealant

TECHNICAL INFORMATION

ANASEAL HC100 is a high performance, water washable, heat cured sealant designed for impregnating porous materials. The sealant cures to form a hard durable thermoset plastic formed by a free radical polymerization initiated by exposure to heat. The sealant can be cured at temperatures between 80°C - 96°C, (177° F -205° F). Cure is preferably accomplished by submersion in heated water.

ANASEAL HC100 is suitable for use in all currently available impregnation equipment for the sealing of porous metal substrates. The sealant is suitable for use with all common types of impregnation processes including: wet vacuum, wet vacuum/pressure, dry vacuum/pressure, or pressure impregnation.

ANASEAL HC100 forms a densely crosslinked thermoset polymer when cured. The sealant is formulated with a reactive surfactant and small amount of a rust inhibitor to maximize washability and provide some protection against rusting. This critical formula results in a sealant with a high resistance to solvents and to thermal degradation, yet is easily washable in plain water.

I. GENERAL PROPERTIES

The following data is not intended to be used for specifications, but are typical properties based on laboratory results. Chemence technical personnel can help determine actual specification data.

Uncured Properties

Composition/type:	methacrylate monomers
Appearance/Color:	translucent, amber liquid
Viscosity @23°C	
#1 Zahn Cup:	30 - 34 seconds
Specific Gravity:	1.06
Flash Point:	>200°F
Vapor Pressure:	<5 mmHg
Flourescence	Yes

Cured Properties

Appearance:	hard, translucent,plastic
Hardness Shore D(ASTM D2240)	70-80

II. SOLVENT RESISTANCE

ANASEAL HC100 is resistant to almost all common solvents, including hydrocarbon solvent (oils, gasoline), chlorinated and fluorinated solvents, mild caustic acid solutions and water. The sealant has passed all requirements of Mil-I-17563C and is QPL listed. The following solvent conditions were tested and approved per Mil-I-17563 Revison C Class 1:

Solvent	Results
Water	No Leakage
Oil	No Leakage
Hydraulic Fluid	No Leakage
Hydrocarbon fluid	No Leakage
Turbine Fuel	No Leakage
Lubricating Oil	No Leakage
Carbon removing compound	No Leakage
Ethylene glycol	No Leakage

III. SERVICE TEMPERATURE RANGE

ANASEAL HC100 is formulated from the highest quality monomers to maximize the service operating range of the polymer. HC100 is recommended for continuous service from -40°C, (-40°F) to 180°C, (356°F). Peak intermittent temperatures exceeding above or below -54°C, (-65°F) to 200°C, (392°F) may be permissible in particular applications

IV. CURING RATES AND METHODS

Cast parts must be free of cutting oils and dry prior to resin impregnation. It is recommended that plating or anodizing etc. be completed prior to impregnation.

Powder metal parts should be processed immediately after sintering and before secondary operations. Machineability of impregnated parts is substantially improved due to the reduction in irregularities in the powder metal part.

After impregnation, excess sealant can be recovered in a centrifuge before rinsing. A corrosion inhibitor can be added to the hot water tank to increase protection from rust or corrosion if required.

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ANASEAL HC100 cures when the temperature of the sealant within the part porosity reaches 90° C for a minimum of three minutes. Special initiators blended into the sealant cause free radical polymerization once sealant temperature reaches specified cure temperatures. Thermal conductivity of the parts being impregnated and the recovery rate of the curing medium are factors used to calculate actual process times. The typical method for curing is submersion of impregnated parts in heated water until cure temperature is sustained for five minutes or more. Efficient thermal conductivity shortens processing time. Parts with large cross section areas may require longer processing times to achieve the required cure temperature.

Reactivity of the impregnation resin is monitored by measuring gel time of a representative sample from the tank. Resin temperature should be kept below 80oF. Gel time measured in a 15x 85mm test tube should be between 4 - 4.5 minutes at 90oC.

V. STORAGE

ANASEAL HC100 is easy to store and will exhibit long shelf life under proper storage conditions. The sealant should be stored in its original container and away from direct sunlight or other sources of UV light. Storage temperatures should be maintained below 27°C (80°F).

VI. HANDLING

ALL CHEMICALS SHOULD BE HANDLED WITH CARE. ANASEAL sealants can be safely handled using normally accepted practices for handling non-toxic industrial chemicals. Rubber gloves should be worn when handling liquid sealant. Avoid excessive skin contact and wash thoroughly with water and mild soap if contact occurs. If dermatitis occurs, seek medical attention and avoid further exposure.

Avoid accidental contact with the eyes by using safety glasses. If accidental contact with the eyes should occur, flush immediately with copious amounts of clean water and obtain medical attention.

VII. WASTE TREATMENT

Cured HC100 is inert and can be disposed of as ordinary industrial trash. Uncured sealant should be cured before disposal. Sealant in solution in wash water effluent is biodegradable and normally accept-

able at local POTW treatment facilities. Most in-plant treatment systems can process moderate effluent with minimal difficulty. Contact your Chemence impregnation representative for assistance with specific application issues.

VIII. QUALITY STANDARDS

CHEMENCE ANASEAL IMPREGNATION SEALANTS are manufactured under standards and approvals certified to: ISO9001:2000

FOR TECHNICAL OR OTHER ASSISTANCE, PLEASE CALL 770-664-6624

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