

Pyrogel 100

High-Temperature Ultrasonic Couplant

Pyrogel® 100 is a broad temperature range couplant for thickness gauging, flow metering, acoustic emissions testing and flaw detection/sizing. These products contain no polymers and resists drying, making them an excellent choice for long term flow metering applications.



BENEFITS

- Broadest temperature range
- Non-drying for long-term coupling or extended inspection time
- Good choice for long-term flow metering
- Excellent long-term corrosion inhibition
- Clings well to vertical and overhead surfaces

APPLICATIONS

Defect location: subsurface

Ideal for:

- Flaw detection
- Thickness gauging
- Acoustic emission testing
- Corrosion testing
- Long-term flow metering
- High temperature ultrasonic testing
- Power generation boilers
- Transmission pipes
- Pressure vessels
- Pipes, tubular goods, casing and connections
- Low temperature locations
- Long-term coupling

SPECIFICATION COMPLIANCE

- API
- ASME
- AWS

PROPERTIES

Appearance	Translucent gel
Color	Colorless
Viscosity	Thick gel
Silicone	Yes
Glycerin	No
Propylene Glycol	No
Halogens	<50 ppm
Sulfur	<50 ppm
Water Soluble	No
Flash Point*	559°F / 293°C
Auto-ignition Temperature†	894°F / 479°C

* Flash point temperature determined in accordance with ASTM Method D92 using the Cleveland Open Cup method. In areas where vapors may be confined in an enclosed or semi- enclosed area, the actual flash point of this product may be lower than recorded.

† Auto-ignition temperature determined in accordance with ASTM Method E659.

USE RECOMMENDATIONS

NDT Method	Ultrasonic Testing
Required Equipment	UT equipment, transducer
Usage Temperature[‡]	-50 to 805°F / -45 to 429°C
Storage Temperature	50 to 86°F / 10 to 30°C
Compatibility	Most composites and metals

[‡] Recommended temperature based on Flash Point and Auto-ignition Temperature. In areas where flame or other ignition source may be present, or in applications where vapors may be confined in an enclosed or semi-enclosed area, these products should not be used above the flash point temperature.

INSTRUCTIONS FOR USE

In most applications, the transducer is best coupled with the thinnest layer of couplant possible. Apply a small bead of couplant directly to the center of the transducer face and push the transducer down onto the test surface with a uniform force so the couplant spreads out evenly towards the edge of the transducer.

In high-temperature applications it is recommended that extra care is taken to use just enough couplant to perform the test procedure as excess couplant may increase vapors which can pose a flash hazard.

Extreme-Temperature Guidelines

Before use, make sure the surface temperature of the test piece does not exceed the maximum specified temperature for the application and environmental conditions.

At high temperatures, couplants evaporate relatively quickly; more couplant may be required near the upper end of the operating temperature range to compensate for evaporation. Care should be taken to avoid using excess couplant as this may lead to increased vapors which can pose a flash hazard.

The flash point of a material is the lowest temperature at which it can vaporize to form an ignitable mixture in air. At the flash point temperature, the material vapor will flash only if an ignition source is present and the vapor may cease to burn when the ignition source is removed. In areas where vapors may be confined in an enclosed or semi-enclosed area, the flash point of a material may be lower than the recorded value.

The auto-ignition temperature of a material is the lowest temperature at which it will spontaneously ignite in a normal atmosphere without an external source of ignition, such as a flame or spark. Environmental or atmospheric factors will affect auto-ignition temperature; therefore it is important to observe a suitable safety margin in conjunction with auto-ignition temperature.

Smoke develops as the couplant begins to decompose due to heat exposure. Smoke is not an indication the couplant is not working, but it does indicate the effective coupling time is limited. Smoke produces vapors which may lower the couplant flash point, particularly in enclosed or semi-enclosed areas.

A couplant's upper temperature range for short duration thickness gauging is higher than when used for flaw detection.

REMOVAL

Remove excess couplant from transducers and other surfaces by wiping with disposable rags or paper towels, being careful to protect skin from hot surfaces. Do not use solvent-based cleaners on hot surfaces.

STORAGE

Store couplant in the original container. Do not freeze. Store out of direct sunlight. Keep container closed when not in use. Never put unused couplant back into the original storage container. Refer to Safety Data Sheet for additional storage instructions.

PACKAGING

12 fl oz / 354 ml bottle (case of 2) 24-212

1 gal / 3.78 L cubitainer 24-901

HEALTH AND SAFETY

Extra care should be taken when operating with couplants in high-temperature applications; refer to Extreme-Temperature Guidelines for pertinent information regarding couplant behavior and properties at high-temperatures.

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