

HR-524

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PRODUCT NAME:

Temperature Indicating Paint

DESCRIPTION:

HR-524 is a one or two component silicone or acrylic paint incorporate thermally sensitive pigments which change color when exposed to heat. The color change in indicators is the result of chemical change, reversible and irreversible. Colors before and after heating are quite distinct and the change is easily recognizable. The paints can be directly applied at room temperature to practically any surface.

Paints can be divided into two groups. Single - change paints undergo one reliable color change in the range 60 °C to 610 °C. Multi - change paints change through a spectrum of colors at various points in the range 150 °C to 1100 °C.

The many industrial uses of temperature - sensitive paints fall into two categories. First they may be used purely to observe heat patterns, so enabling high or low temperature points to be detected. This is particularly important at very high temperatures when the effect of cooling gases may be upset by rivet heads, etc. This would cause gas to be locally diverted from the surface, and so give rise to an abnormally high surface temperature. Both the efficiency of insulation and the uniformity of head dispersion can be studied using paints. The second way which thermal paints are used in the

Measurement of temperature. This can be done on any surface no matter if it is inaccessible or revolving at high velocity during the thermal examination. To make such measurements it is essential to have calibration graphs to relate the time/temperature cycle.

TECHNICAL DATA:

Binder	Special silicone resin , acrylic resin
Pigment	Thermally sensitive pigments
Finish	Eggshell
Color (at ambient temperature)	Green
Color change limits	From green to blue : 180 - 220 °C From blue to white : 310 - 350 °C
Substrate	Stainless steel , Ethyl silicate primed steel
Volume solids	45±3 %
Typical dry film thickness	25- 30 Microns per one coat
Number of coat	One or two
Full cured condition	At least 3 hours at 180 to 200 °C
Flash point	30 °C
Specific gravity	1.2 ±0.1Kg/Lit
Application method	Conventional or Airless spray , brush , roller
Theoretical spreading rate (at 30 microns)	13 M ² /Lit
Thinner / Cleaner	T-500
Weight of added thinner	5 %
Packing	4 kg
Shelf life	12 Months

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Drying Time

Temp	Touch dry	Hard dry	Overcoating	
			Min	Max
15°C	90 minutes	8 hours	14 hours	Not limited
25°C	40 minutes	6 hours	12 hours	Not limited
40°C	20 minutes	4 hours	8 hours	Not limited

Note: Drying times are dependent on applied film thickness, all data in this catalogue

Are reported at recommended DFT

SURFACE PREPARATION

All Surfaces to be coated should be clean, dry and free from contamination. Prior to Paint application all surfaces should be assessed and treated in accordance with ISO 8504:1992.

Primed Surfaces

All surfaces to be coated should be clean, dry and free from contamination

Water wash or water wash with high pressure as appropriate, and remove all oil or grease, soluble contaminants, and other detrimental foreign matter in accordance with SSPC-SP1 solvent cleaning.

HR-524 is suitable for application to steelwork freshly coated with zinc silicate shop primers. If the zinc shop primer shows extensive or widely scattered breakdown, or excessive zinc corrosion products, overall sweep blasting will be necessary. Other types of shop primer are not suitable for overcoating and will require complete removal by abrasive blast cleaning. Weld seams and damaged areas should be blast cleaned to Sa2½ (ISO8501-1:1988).

REPAIR

HR-524 may be applied directly over aged HR-524 following thorough fresh water washing and degreasing provided the coating to be overcoated is in an intact and tightly adherent condition. Loose or flaking coatings should be removed back to a firm edge and HR-524 or an appropriate primer should be used to repair the area before application of the full coat.

Surface preparation shall not take place in the following conditions:

- A) At temperature below 5 °C
- B) When the relative humidity greater than 85%
- C) When the metal surface temperature is less than 3 °C above the dew point
- D) Outside day light hours on exterior locations

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Application Method

This material is a one component coating and should always be mixed thoroughly with a power agitator before application. Stir during application to maintain uniformity of material.

Application Equipments

Air less Spray	Tip range 0.015-0.017 inch not less than 141 Bar (2000 psi)	Total output pressure at spray tip
Air Spray	Nozzle orifice 1.8mm Nozzle pressure: 2-4 Bar (29-58 psi)	
Brush	Typically 30 mic can be achieved.	
Roller	Typically 30 mic can be achieved.	

Flush Equipment with recommended Cleaner before and after use.

ENVIRONMENTAL CONDITIONS:

- To prevent moisture condensation during application, surface temperature must be at least 3 °C above the dew point.
- Never apply coatings under reverse environmental condition.
- In hot climate, material temperature should be 20 to 25 °C prior to mixing.
- For satisfactory cure, air and surface temperature must be above 10 C
- Paint shall not be applied when wind speed is in excess of 7 m/s

Air temperature	15 to 35 °C
Surface temperature	15 to 40 °C
Material temperature	10 to 30 °C
Relative humidity	Max 80 %

HEALTH AND SAFETY:

This product is Flammable. Keep away from heat and open flame .Keep container closed .Use with adequate ventilation. Avoid prolonged and repeated contact with skin. If used in confined areas, observe the following precautions to prevent hazards of fire or explosion or damage to the health:

- 1-Circulate adequate fresh air continuously during application and drying.
- 2-Use fresh air masks and explosion proof equipment.
- 3- Prohibit all flames, sparks, welding and smoking.

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