

# IFRIT PR01

TEMPORARY DATA SHEET

**1100°C**  
**2012°F**

excellence in  
heat & fire  
protection

**IFRIT PR01** is a high performance fire & heat protection material. It behaves as an active insulating coating, reacting to heat by developing an endothermic reaction without releasing any pollutants. The system may be applied onto composite materials, metal and other surfaces using a notched spreader or sprayed with an airless.

**IFRIT PR01** is coming to the end of its R+D Beta phase and is currently been tested on prototypes by selected experts in the aerospace, marine, military and sports competition industries before its ISO certification (Already FAR25 certified). This data sheet is issued with samples for tests purposes only.

***IFRIT** range of products, is water-based and will be available in different versions for different applications and certifications.*

## DESCRIPTION

**IFRIT PR01** is a thixotropic epoxy compound that can withstand temperatures of up to 1100°C (2012°F). Unlike other passive heat protection solutions, **IFRIT PR01** acts as a **passive thermal shield** up to 550°C (1022°F). Above that temperature **IFRIT PR01** acts as an **active thermal shield**, involving during that second phase a chemical reaction within its mineral components, starting a ceramic reaction. This means the material protected by **IFRIT PR01** will remain shielded from high heat and therefore will not loose most of its mechanical properties in case of fire.

## MIXING RATIO BY WEIGHT

Part. A : 100 pbw                      Part. B : 30 pbw

Mix both products in a container, then transfer it to another container and stir thoroughly again for several seconds.

## APPLICATION PROCEDURE

IFRIT PR01 can be sprayed with an airless gun by adding 5 to 10% of water.

IFRIT PR01 can also be applied using a notched spreader or squeegee to obtain a homogeneous thickness. Notches should be 2mm deep, triangular shape.

Should the compound stick to the spreader, add 5 to 10% of water.

The compound will start spreading over the surface almost immediately. Notches marks will however remain slightly visible.

COVERAGE :                      - 700 g/m<sup>2</sup> wet ( = 750 µm)  
   - 500 g/m<sup>2</sup> dry ( = 500 µm)

## CURING SCHEDULE

Cure the surface in a ventilated area at 40°C until the film loses 40% of its weight (usually 1 to 4 hours at 25°C).

## OVERCOATING

The above application procedure is to be repeated for each layer. The number of layers varies upon the thermal and fire protection required (see graphics on next page).

Over coating does not require any surface preparation as long as it occurs less than 48 hours after the previous layer.

## PROPERTIES

Density < 1

Ingredients epoxy matrix with mineral additives

Thickness 750µ to 3mm, up to several centimeters if required

## TYPICAL CURED THERMAL PROPERTIES

Thermal conductivity @ 38°C (100°F)	0.05 to 0.07
Specific heat @ 24°C (75°F)	0.84 to 1 KJ/Kg.K
Ablation temperature	450 to 500 °C (842 to 932°F)
Average PCS ISO 1716	-0.311 mega joules
Continuous use temperature	350 to 400 °C (662 to 752°F)
Maximum peak temperature	1100°C (2012°F)

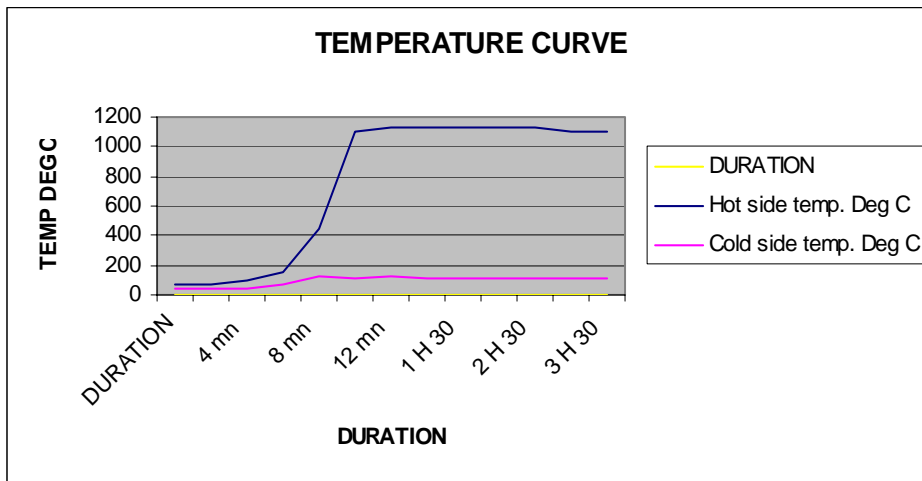
## CLASSIFICATIONS

IFRIT PR01 exceeds the following certification requirements:

FAR 25	(FAR25-AC 20-135)(ISO 2685)
M0	(NF 19500-507 & ISO 1716)

## LAYER THICKNESS

**IFRIT PR01** can be applied in thicknesses varying from 0.75mm to 25mm+. Increasing thickness means a longer protection time. A thin coat however will protect well for a shorter duration. A 4mm thick layer complies with FAR 25 with a guaranteed time of 30mn full protection.



COLDSIDE of HADES PLATE.  
Reading: 130°C (266°F)



HOT SIDE of HADES PLATE.  
Reading: 1018°C (1864°F)

The data presented in this document is the result of tests and is believed to be accurate. This document is however a temporary and incomplete data sheet. A final data sheet will be published in due time.

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