

# Intertherm 181

Inorganic Silicate



**Product Description**

A two component, high temperature resistant topcoat based on inorganic silicate technology.

**Intended Uses**

Intertherm 181 has been specifically designed for application over inorganic zinc primers, which provides a single specification to be used for the protection of all pipework from corrosion at continuous operating temperatures up to 400°C (752°F), and intermittent temperature surges up to 500°C (932°F).

Ideally suited for use in the petrochemical industry, especially refineries and offshore structures, where significant volumes of insulated and uninsulated pipework can be coated with a single specification at works, reducing complexity of work schedules etc.

**Practical Information for Intertherm 181**

<b>Colour</b>	Limited range
<b>Gloss Level</b>	Matt
<b>Volume Solids</b>	69%
<b>Typical Thickness</b>	100-125 microns (4-5 mils) dry equivalent to 145-181 microns (5.8-7.2 mils) wet
<b>Theoretical Coverage</b>	5.5 m <sup>2</sup> /litre @ 125 microns d.f.t. and stated volume solids 221 sq.ft/US gallon @ 5 mils d.f.t. and stated volume solids
<b>Practical Coverage</b>	Allow appropriate loss factors
<b>Method of Application</b>	Airless spray, Airspray
<b>Drying Time</b>	

Temperature	Touch Dry	Hard Dry	Overcoating Interval*
10°C (50°F)	1 hour	4 hours	Not Applicable
15°C (59°F)	30 minutes	2½ hours	Not Applicable
25°C (77°F)	15 minutes	1½ hours	Not Applicable
40°C (104°F)	10 minutes	45 minutes	Not Applicable

\* See system compatibility

**Regulatory Data**

<b>Flash Point</b>	Base (Part A) 16°C (61°F)	C/A (Part B) 15°C (59°F)	Mixed 16°C (61°F)
<b>Product Weight</b>	1.65kg/l (13.8lb/gal)		
<b>VOC</b>	410g/l (3.42lb/gal) 3.42lb/gal (410g/l)	UK - PG6/23(92), Appendix 3 USA - EPA Method 24	

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## 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.

Oil or grease should be removed in accordance with SSPC-SP1 solvent cleaning.

### Zinc Primed Surfaces

Intertherm 181 should always be applied over a recommended zinc based primer.

Intertherm 181 is suitable for application to steelwork freshly coated with zinc silicate primers.

If the zinc silicate 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 (ISO 8501-1:1988) or SSPC SP6 (or SSPC SP10 for optimum performance), and reprime with zinc silicate.

Ensure that the surface of the primer is clean, dry and free from contamination and zinc salts before application of Intertherm 181. Ensure zinc primers are fully cured before overcoating

## Application

<b>Mixing</b>	Intertherm 181 must be applied in accordance with the Intertherm 181 detailed International Protective Coatings Recommended Working Procedures.			
	Material is supplied in two containers as a unit. Always mix a complete unit in the proportions supplied. Once the unit has been mixed it must be used within the working pot life specified.			
	(1) Agitate Base (Part A) with a power agitator.			
	(2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.			
<b>Mix Ratio</b>	39.0 parts : 1 parts by volume.			
<b>Working Pot Life</b>	10°C (50°F) 2 hours	15°C (59°F) 2 hours	25°C (77°F) 1½ hours	40°C (104°F) 1 hour
<b>Airless Spray</b>	Recommended	-- Tip range 0.53-0.89mm (21-35 thou) Total output fluid pressure at spray tip not less than 126kg/cm <sup>2</sup> (1,800 p.s.i.)		
<b>Air Spray</b>	Recommended	Use suitable proprietary equipment, e.g. Gun           DeVilbiss MBC or JGA Air Cap     30 Fluid Tip    E * See Product Characteristics		
<b>Brush</b>	Suitable - Small areas only	Typically 75 microns (3 mils) can be achieved		
<b>Roller</b>	Not recommended			
<b>Thinner</b>	International GTA007	Do not thin more than allowed by local environmental legislation.		
<b>Cleaner</b>	International GTA220 (or GTA415)			
<b>Work Stoppages</b>	Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with International GTA220. Partially used containers may show surface skinning and/or a viscosity increase of material after storage - if observed discard, and resume work with freshly mixed full units			
<b>Clean Up</b>	Clean all equipment immediately after use with International GTA220. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency of cleaning will depend upon amount sprayed, temperature and elapsed time, including any delays.			
	All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.			

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## Product Characteristics

The detailed Intertherm 181 Recommended Working Procedures should be consulted prior to use.

The equipment outlined under Airless Spray and Conventional Spray is intended as a guide only, and other manufacturers equipment may be used. Best results are obtained using airless spray, where the use of thinners is not normally required. For conventional spray application, thinning is required to obtain optimal spray characteristics, 10% maximum of GTA007 may be used.

Intertherm 181 reacts with atmospheric moisture, and as such when in the can should remain covered at all times. Failure to keep tin covered will result in skinning of paint and loss of pot life.

With Intertherm 181, no increase in viscosity is observed after mixing, even after long periods. However, if the stated pot lives are exceeded then the film formed on curing will have inferior properties and will not give the specified level of performance.

Surface temperature must always be a minimum of 3°C (5°F) above dew point.

When applying Intertherm 181 in confined spaces ensure adequate ventilation.

To enable optimum cure and film strength, it is necessary to apply a full wet coat in order to minimise overspray. Best practice is to apply using airless spray, keeping the spray gun close to the substrate and using slow passes.

The cure times are dependent upon the relative humidity during cure. Below 65% relative humidity the cure times will increase dependent upon the ambient temperature and relative humidity during the application and curing period. Please consult International Protective Coatings for further details in this situation.

Intertherm 181 is suitable for protection of steel operating at continuous dry temperatures of up to 400°C (752°F), with intermittent surges up to 500°C (932°F).

High temperature resistance is not attained until the film has completely cured. Cure is a function of temperature, humidity and film thickness. Normally films at 125 microns (5 mils) dry film thickness will exhibit full and complete cure for optimal temperature resistance in 1 day at 25°C (77°F) and 65% relative humidity. Curing times are proportionately shorter at elevated temperatures and longer at lower temperatures and relative humidity..

After the last coat has cured hard, the coating system dry film thickness should be measured using a suitable non-destructive magnetic gauge to verify the average total applied system thickness. The coating system should be free of all pinholes or other holidays. The cured film should be essentially free of runs, sags, drips, inclusions or other defects. All deficiencies and defects should be corrected before placing the coating system into service. Consult International Protective Coatings Intertherm 181 Working Procedures for detailed repair procedures.

## Systems Compatibility

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The following primers are recommended for Intertherm 181:-

Interzinc 12  
Interzinc 22

For other suitable primers, consult International Protective Coatings.

Intertherm 181 is not normally overcoated when used in elevated temperature service

At operating temperatures below 150°C (302°F), overcoating of Intertherm 181 for pipe marking purposes may be possible. Please consult International Protective Coatings for the latest technical advice.

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## Additional Information

Further information regarding industry standards, terms and abbreviations used in this data sheet can be found in the following sections of the International Protective Coatings data manual:

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage

Individual copies of these information sections are available upon request.

## Safety Precautions

This product is intended for use only by professional applicators in industrial situations in accordance with the advice given on this sheet, the Material Safety Data Sheet and the container(s), and should not be used without reference to the Material Safety Data Sheet (MSDS) which International Protective Coatings has provided to its customers.

All work involving the application and use of this product should be performed in compliance with all relevant national, Health, Safety & Environmental standards and regulations.

In the event welding or flame cutting is performed on metal coated with this product, dust and fumes will be emitted which will require the use of appropriate personal protective equipment and adequate local exhaust ventilation.

If in doubt regarding the suitability of use of this product, consult International Protective Coatings for further advice.

<b>Pack Size</b>	10 litre unit	Intertherm 181 Base	9.75 litres in a 10 litre container
		Intertherm 181 Curing Agent	0.25 litres in a 0.5 litre container
	5 gallon unit	Intertherm 181 Base	4.8 gallons in a 5 gallon container
		Intertherm 181 Curing Agent	0.123 gallons in a 1 pint container
For availability of other pack sizes contact International Protective Coatings			
<b>Shipping Weight</b>	U.N. Shipping No. 1263		
	10 litre unit	17.87kg (39.4lbs) Base (Part A)	0.25kg (0.6lbs) Curing Agent (Part B)
	5 gallon unit	33.18kg (73.2lbs) Base (Part A)	0.46kg (1.0lbs) Curing Agent (Part B)
<b>Storage</b>	Shelf Life	6 months minimum at 25°C (77°F). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.	

## Disclaimer

*The information given in this sheet is not intended to be exhaustive and any person using the product for any purpose other than that specifically recommended in this sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. Any warranty, if given, or specific Terms & Conditions of Sale are contained in International's Terms & Conditions of Sale, a copy of which can be obtained on request. Whilst we endeavour to ensure that all advice we give about the product (whether in this sheet or otherwise) is correct we have no control over either the quality or condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing to do so, we do not accept any liability whatsoever or howsoever arising for the performance of the product or for any loss or damage (other than death or personal injury resulting from our negligence) arising out of the use of the product. The information contained in this sheet is liable to modification from time to time in the light of experience and our policy of continuous product development. It is the user's responsibility to check that this sheet is current prior to using the product. Issue date: 27/09/2000*

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## International Protective Coatings

### Worldwide Availability

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