

## Novolac Vinyl Ester

### PRODUCT DESCRIPTION

Ceilcote 180 Flakeline is a heavy duty, glass flake reinforced, chemically resistant novolac vinyl ester lining for protection of steel against aggressive chemicals in immersion service.

### INTENDED USES

Ceilcote 180 Flakeline is suitable for application in a wide range of environments and industries, such as fertiliser manufacture, petrochemical, metal finishing and refining, pulp and paper, power, textiles and transportation.

It has outstanding chemical resistance, permeation resistance and high temperature capability.

### PRACTICAL INFORMATION FOR CEILCOTE 180 FLAKELINE

<b>Colour</b>	Off White
<b>Gloss Level</b>	Not applicable
<b>Volume Solids</b>	100% reactive
<b>Typical Thickness</b>	750-1900 microns (30-76 mils) dry equivalent to 833-2111 microns (33.3-84.4 mils) wet per coat
<b>Practical Coverage</b>	0.90 m <sup>2</sup> /litre at 1000 microns d.f.t and 90% volume solids 36 sq.ft/US gallon at 40 mils d.f.t and 90% volume solids (see Page 3 Product Characteristics)
<b>Method of Application</b>	Trowel

#### Drying Time

Temperature	Touch Dry	Hard Dry	Overcoating interval with self	
			Minimum	Maximum
10°C (50°F)	3 hours	8 hours	24 hours	4 weeks <sup>1</sup>
15°C (59°F)	2.5 hours	6.5 hours	24 hours	4 weeks <sup>1</sup>
25°C (77°F)	90 minutes	3 hours	4 hours	2 weeks <sup>1</sup>
35°C (95°F)	75 minutes	2 hours	3 hours	7 days <sup>1</sup>

<sup>1</sup> When surface temperatures exceed 35°C (95°F) or are exposed to direct sunlight, overcoating should take place as soon as the coating may be walked on, in order to avoid intercoat adhesion issues.

### REGULATORY DATA

<b>Flash Point (Typical)</b>	Part A 33°C (91°F); Part B 77°C (171°F); Mixed 32°C (90°F)		
<b>Product Weight</b>	1.2 kg/l (10.0 lb/gal)		
<b>VOC</b>	1.68 lb/gal (202 g/lt)	EPA Method 24	
	102 g/kg	EU Solvent Emissions Directive (Council Directive 2010/75/EU)	
	0.25 lb/gal (30 g/lt)	ASTM D2369	

See Product Characteristics section for further details

## Protective Coatings

## Novolac Vinyl Ester

### SURFACE PREPARATION

All surfaces to be coated should be clean, dry and free from contamination. Prior to paint application, all steel surfaces should be assessed and treated in accordance with ISO 8504:2000.

Oil or grease should be removed in accordance with SSPC-SP1 Solvent Cleaning.

### Steel Substrates

For immersion service or service in humid conditions or elevated temperatures, this product should be applied to suitably primed surfaces which have been prepared by abrasive blast cleaning to Sa3 (ISO 8501-1:2007), SSPC SP5 or NACE #1. A minimum surface profile of 75 microns (3 mils) is required.

### Concrete Substrates

Ceilcote 180 Flakeline is not suitable for application to concrete.

### APPLICATION

<b>Mixing</b>	<p>Ceilcote 180 Flakeline is a multi-component product and as such the correct mixing ratios and working pot life must be strictly adhered to.</p> <ol style="list-style-type: none"> <li>(1) Agitate Base (Part A) with a power agitator.</li> <li>(2) Combine entire contents of Curing Agent (Part B) with Base (Part A) and mix thoroughly with power agitator.</li> </ol> <p>When FG-1 Dye is to be used, this should be incorporated into Part A, prior to addition of Part B, to achieve a uniform colour.</p> <p><b>Do not mix more material than can be applied within the recommended pot life.</b></p>								
<b>Mix Ratio</b>	1 litre Part A : 15ml Part B (1 gallon Part A : 2oz Part B)								
<b>Working Pot Life</b>	<table border="0"> <tr> <td>10°C (50°F)</td> <td>15°C (59°F)</td> <td>25°C (77°F)</td> <td>35°C (95°F)</td> </tr> <tr> <td>60 minutes</td> <td>40 minutes</td> <td>40 minutes</td> <td>30 minutes</td> </tr> </table>	10°C (50°F)	15°C (59°F)	25°C (77°F)	35°C (95°F)	60 minutes	40 minutes	40 minutes	30 minutes
10°C (50°F)	15°C (59°F)	25°C (77°F)	35°C (95°F)						
60 minutes	40 minutes	40 minutes	30 minutes						
<b>Plural Component</b>	Not suitable								
<b>Airless Spray</b>	Not suitable								
<b>Brush</b>	<p>Suitable - small areas only</p> <p>Multiple coats may be required to achieve specified film thickness.</p>								
<b>Roller</b>	Use for smoothing only.								
<b>Trowel</b>	Recommended								
<b>Thinner</b>	DO NOT THIN								
<b>Work Stoppages</b>	Do not allow material to remain on equipment. Thoroughly clean all equipment with T-410 Solvent. Once units of paint have been mixed they should not be resealed and it is advised that after prolonged stoppages work recommences with freshly mixed units. Once units have been mixed, work should continue until all mixed material has been used.								
<b>Clean Up</b>	<p>Clean all equipment immediately after use with T-410 Solvent. Frequency of cleaning will depend upon amount applied, temperature and elapsed time, including any delays.</p> <p>All surplus materials and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.</p>								

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### PRODUCT CHARACTERISTICS

This datasheet provides general guidance on the use of Ceilcote 180 Flakeline. Specific project requirements will be dependent upon the service end use and operating conditions of the tank or vessel. Always consult International Protective Coatings to confirm that Ceilcote 180 Flakeline is suitable for contact with the product to be stored.

The detailed project coating specification provided by International Protective Coatings must be followed at all times.

The detailed Application Guidelines for the relevant Ceilcote system should always be consulted prior to use.

Although Ceilcote 180 Flakeline is 100% reactive, depending upon the application conditions, the practical volume solids may be lower and International Protective Coatings suggest a value of 90% for estimating spreading rate.

Ceilcote 180 Flakeline is resistant to most acids, alkalis and solvents. Consult International Protective Coatings to confirm that the intended Ceilcote system is suitable for contact with the service conditions.

The Ceilcote 180 Flakeline system may be used for high temperature service with the selection of the appropriate primer; see the relevant Application Guidelines for further information.

Apply in good climatic conditions. The temperature of the surface to be coated should be between 10°C (50°F) and 45°C (113°F) and at least 3°C (5°F) above the dew point. In line with good painting practice, application should not take place in conditions which are deteriorating, e.g. dew point is falling or there is a risk of condensation forming. Ensure adequate ventilation is provided throughout application and curing. Dehumidification (DH), air conditioning and/or heating equipment may be necessary to control environmental conditions.

Where the overcoating interval is exceeded, confirm recoatability by wiping with styrene monomer. If the surface becomes 'tacky', adhesion is acceptable. If not softened by styrene, the surface must be sweep blasted or mechanically abraded to provide a non-glossy, abraded surface. Primed surface must be dry and free of foreign matter at time of lining, coating or flooring application.

Following correct installation, Ceilcote 180 Flakeline may be returned to service after the following intervals:

10°C (50°F): 48 hours  
20°C (70°F): 24 hours  
35°C (90°F): 16 hours

Note: VOC values are typical and are provided for guidance purpose only. These may be subject to variation depending on factors such as differences in colour and normal manufacturing tolerances.

Low molecular weight reactive additives, which will form part of the film during normal ambient cure conditions, will also affect VOC values determined using EPA Method 24.

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### SYSTEMS COMPATIBILITY

Ceilcote 180 Flakeline is designed to be used in combination with a number of Ceilcote primers, linings or coatings. Please consult the specification and Application Guidelines.

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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 documents available at [www.international-pc.com](http://www.international-pc.com):

- Definitions & Abbreviations
- Surface Preparation
- Paint Application
- Theoretical & Practical Coverage
- Ceilcote 180 Flakeline Application Guidelines

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

Proper ventilation must be provided during application and afterwards during curing (refer to product datasheets for typical curing times) to ensure safe limits and prevent fires and explosions. Forced extraction will be required in confined spaces. Ventilation and/or respiratory personal protective equipment (airfed hoods or appropriate cartridge masks) must be provided during application and curing. Take precautions to avoid skin and eye contact (overalls, gloves, goggles, masks, barrier cream, etc).

Before use, obtain, read and then follow the advice given on the Material Safety Data Sheets (Parts A and B if two-pack) and the Health and Safety section of the Coatings Applications Procedures for this product.

In the event that 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.

The detailed safety measures are dependent on application methods and the work environment. If you do not fully understand these warnings and instructions or if you cannot strictly comply with them, do not use the product and consult International Protective Coatings.

PACK SIZE	Unit Size	Part A		Part B	
		Vol	Pack	Vol	Pack
	15 litre	14.71 litre	20 litre	0.29 litre	0.7 litre
	4 US gal	4 US gal	5 US gal	10 fl oz	1 US pint

For availability of other pack sizes, contact AkzoNobel.

SHIPPING WEIGHT (TYPICAL)	Unit Size	Part A	Part B
	15 litre	21.32 kg	0.39 kg
	4 US gal	45.6 lb	1 lb

STORAGE	Shelf Life	
		6 months at 20°C (68°F). Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition. During storage and shipment, Ceilcote 180 Flakeline initiator must not be exposed to temperatures exceeding 30°C (90°F). Refrigeration recommended. Best practice would be to hold Parts A and B in separate stores.

### Important Note

*The information in this data sheet is not intended to be exhaustive; any person using the product for any purpose other than that specifically recommended in this data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at their own risk. All advice given or statements made about the product (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the 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 at all for the performance of the product or for (subject to the maximum extent permitted by law) any loss or damage arising out of the use of the product. We hereby disclaim any warranties or representations, express or implied, by operation of law or otherwise, including, without limitation, any implied warranty of merchantability or fitness for a particular purpose. All products supplied and technical advice given are subject to our Conditions of Sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is liable to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to check with their local representative that this data sheet is current prior to using the product.*

*This Technical Data Sheet is available on our website at [www.international-marine.com](http://www.international-marine.com) or [www.international-pc.com](http://www.international-pc.com), and should be the same as this document. Should there be any discrepancies between this document and the version of the Technical Data Sheet that appears on the website, then the version on the website will take precedence.*

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