Enviroline® 405HT LV

Epoxy Novolac

PRODUCT DESCRIPTION

Enviroline 405HT LV is a 100 g/l VOC compliant ultra high solid, low viscosity version of Enviroline 405HT. Specifically designed for airless spray application equipment used to line interior pipe and where both outstanding abrasion resistance and excellent high temperature service performance are required.

INTENDED USES

For harsh abrasive environments in the petrochemical industry, including crude oil, process water, treaters and separator storage tanks and pipe with high operating temperatures.

- Single coat application
- Fast cure **(see page 3 for full cure times)**
- Excellent adhesion
- VOC<100g/l (0.78lb/gal)
- Flexibility, impact and thermal shock resistance
- High temperature resistance
- Excellent abrasion resistance

PRACTICAL INFORMATION FOR ENVIROLINE 405HT LV

Colour	Tan
Gloss Level	Not applicable
Volume Solids	90%
Typical Thickness	300-500 microns (12-20 mils) dry equivalent to 333-556 microns (13.3-22.2 mils) wet
Theoretical Coverage	2.40 m²/litre at 375 microns d.f.t and stated volume solids 96 sq.ft/US gallon at 15 mils d.f.t and stated volume solids
Practical Coverage	Allow appropriate loss factors
Method of Application	Airless Spray, Brush, Plural Component Airless Spray

Drying Time

			Overcoating Interval with recommended topcoats	
Temperature	**Touch Dry**	**Hard Dry**	*Minimum*	*Maximum*
20°C (68°F)	4 hours	12 hours[1]	8 hours	2 days[2]
30°C (86°F)	3 hours	6 hours[1]	6 hours	24 hours[2]
40°C (104°F)	2 hours	4 hours[1]	4 hours	16 hours[2]

[1] Sufficient coating film strength has developed to permit the handling and movement of coated steelwork. A pencil hardness reading of 3H is a recommended guideline to indicate suitability for return to service.
[2] If the maximum overcoating interval is exceeded it will be necessary to thoroughly abrade the surface of the lining with coarse emery paper.

REGULATORY DATA

Flash Point (Typical)	Mixed 27°C (81°F)	
Product Weight	1.63 kg/l (13.6 lb/gal)	
VOC	93 g/lt (0.78 lbs/gal)	Calculated

See Product Characteristics section for further details

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SURFACE PREPARATION

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

Where necessary, remove weld spatter and where required smooth weld seams and sharp edges.

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

Steel Substrates

Best performance will always be achieved when Enviroline 405HT LV is applied to surfaces prepared by abrasive blast cleaning to Sa3 (ISO 8501-1:2007) or SSPC-SP5. Where Enviroline 405HT LV is not to be used in high heat and/or aggressive service, preparation to Sa2½ (ISO 8501-1:2007) or SSPC-SP10 may be acceptable. Contact International Protective Coatings for further information.

A sharp, angular surface profile of 75 microns (3 mils) is recommended.

Enviroline 405HT LV must be applied before oxidation of the steel occurs. If oxidation does occur the entire oxidised area should be reblasted to the standard specified above.

Surface defects revealed by the blast cleaning process should be ground, filled or treated in the appropriate manner.

The preferred method of holding the blast standard is by dehumidification. Alternatively, an approved holding primer may be used.

Concrete Substrates

Refer to International Protective Coatings' Concrete Surface Preparation Guidelines for further information.

APPLICATION

Mixing	Material is supplied in two containers as a unit. Complete units should be stored, mixed and applied in accordance with the Enviroline Application Guidelines.	
Mix Ratio	2 part(s) : 1 part(s) by volume	
Working Pot Life	25°C (77°F) 40°C (104°F) 45 minutes 15 minutes	
Plural Component Airless Spray	Suitable	Refer to Enviroline Application Guidelines for more details.
Airless Spray	Recommended	Refer to Enviroline Application Guidelines for more details. Tip Range 0.58-0.74 mm (23-29 thou)
Brush	Suitable	Can be used for the touch-up of small areas or for stripe coating of welds and edges.
Thinner	Not normally required	Refer to Enviroline Application Guidelines for specific advice.
Cleaner	Enviroline 71C	
Work Stoppages	Do not allow material to remain in hoses, gun or spray equipment. Thoroughly flush all equipment with Enviroline 71C. 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.	
Clean Up	Clean all equipment immediately after use with Enviroline 71C. It is good working practice to periodically flush out spray equipment during the course of the working day. Frequency should depend upon amount sprayed, temperature and elapsed time, including any delays. All surplus material and empty containers should be disposed of in accordance with appropriate regional regulations/legislation.	

PRODUCT CHARACTERISTICS

The detailed Enviroline Application Guidelines should be consulted prior to use.

This datasheet provides general guidance on the use of Enviroline 405HT LV. 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 Enviroline 405HT LV 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.

Stripe coating is an essential part of good working practice and as such should form part of any lining specification.

Note: This product should not be used as a touch-up product for Enviroline 405HT.

For airless spray application, heat each component to 35-41°C (95-105° F) prior to mixing. For plural component application, viscosity of the Part A and Part B varies. For best results, heat Part A side to maximum of 60°C (140°F) and heat Part B side to a maximum of 41°C (105°F).

Use the following chart for preferred temperature conditions. These conditions plus adequate ventilation must be maintained throughout the curing cycle.

	Substrate Temperature	Air Temperature
Preferred	21-49°C (70-120°F)	21-38°C (70-100°F)
Minimum	16°C (60°F)	16°C (60°F)

Please refer to Application Guidelines for further information.

Typical full cure times at the following ambient temperatures are;

20°C (68°F)	48 hours
30°C (86°F)	24 hours
40°C (104°F)	16 hours

After the coating system has cured hard, the dry film thickness should be measured using a suitable non-destructive magnetic gauge to verify the minimum 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. The repaired areas shall be retested and allowed to cure as specified before placing the finished lining into service.

Post-curing is not necessary for most applications, but Enviroline 405HT LV may be post-cured to expedite curing or increase chemical resistance for extremely aggressive environments. Post-cure for a minimum of 2 hours at 121°C (250°F) or 6-8 hours at 66°C (150°F) for maximum resistance.

Maximum continuous dry temperature resistance for Enviroline 405HT LV is 177ºC (350°F).

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.

SYSTEMS COMPATIBILITY

Enviroline 405HT LV should always be applied to correctly prepared substrates. When a primer is required as part of the coating specification, consult International Protective Coatings for specific advice.

Enviroline 405HT LV is designed as a single coat system. It must only be overcoated with itself should re-coats or touch-up be required.

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:

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

Warning: This product contains liquid epoxies and modified polyamines and may cause skin sensitisation if not used correctly.

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PACK SIZE	Unit Size	Part A		Part B	
		Vol	Pack	Vol	Pack
	4 US gal	2.67 US gal	5 US gal	1.33 US gal	2 US gal
	For availability of other pack sizes, contact International Protective Coatings.				

SHIPPING WEIGHT (TYPICAL)	Unit Size	Part A	Part B
	4 US gal	38.1 lb	20.1 lb

STORAGE	Shelf Life	24 months minimum at 25°C (77°F) in original, unopened containers. Subject to re-inspection thereafter. Store in dry, shaded conditions away from sources of heat and ignition.

Important Note

www.international-pc.com