

# Enviroline 405HTR

## Excellence refined

Enviroline<sup>®</sup> 405HTR, a glass reinforced tank lining, is ideal for process vessels and tanks containing a variety of cargos operating at a broad range of temperatures. It can be applied in a single, high build application down to temperatures as low as 10°C (50°F).

- Resists high temperatures in continuous immersion for a wide range of chemicals including crude oil, hydrocarbon water mixtures and associated equipment up to 120°C (249°F)
- Rapid cure times means storage tanks and vessels can be coated, cured and returned to immersion service within 14 hours
- Fast return to service minimizes process disruption and reduces overall installation costs
- Specified as a single coat application minimizes labor and material costs and eradicates intercoat adhesion issues



# Advanced technology in an ever-changing environment

The next generation Enviroline 405HTR offers improved application benefits that meet an ever-changing set of performance demands. Enviroline 405HTR holds a truly unique position within the industrial coatings market.

## A variety of applications

**Petroleum storage tanks** - meets API-652 (American Petroleum Institute) definition of a reinforced thick-film lining for extended storage tank inspection intervals at temperatures up to 120°C (249°F)

**Pipe exteriors** – improved dry heat resistance when used on buried pipe exteriors

**Biofuel storage** – suitable for biofuel storage up to 71°C (160°F)

**Natural gas extraction** – Enviroline 405HTR is resistant to Ethylene Glycol up to 95°C (203°F)

*“Providing the same peace of mind as its predecessor but with added features and benefits, Enviroline 405HTR holds a truly unique position within the industrial coatings market”.*

– Refinery Engineering Manager



## Chemical resistance improvements

- Improved resistance to caustic solutions (passes 10% and 20% NaOH immersion at 37°C [100°F])
- Ethanol immersion resistance at 37°C (100°F)
- Resistant to MiBK immersion at 49°C (121°F)
- Resistant to Cellosolve Acetate at 49°C (121°F)
- Resistant to acid-scrubbing amines such as MDA, MDEA and DGA up to 82°C (180°F)
- Enhanced mechanical and barrier properties due to glass fiber and flake reinforcement

## Environmental sustainability

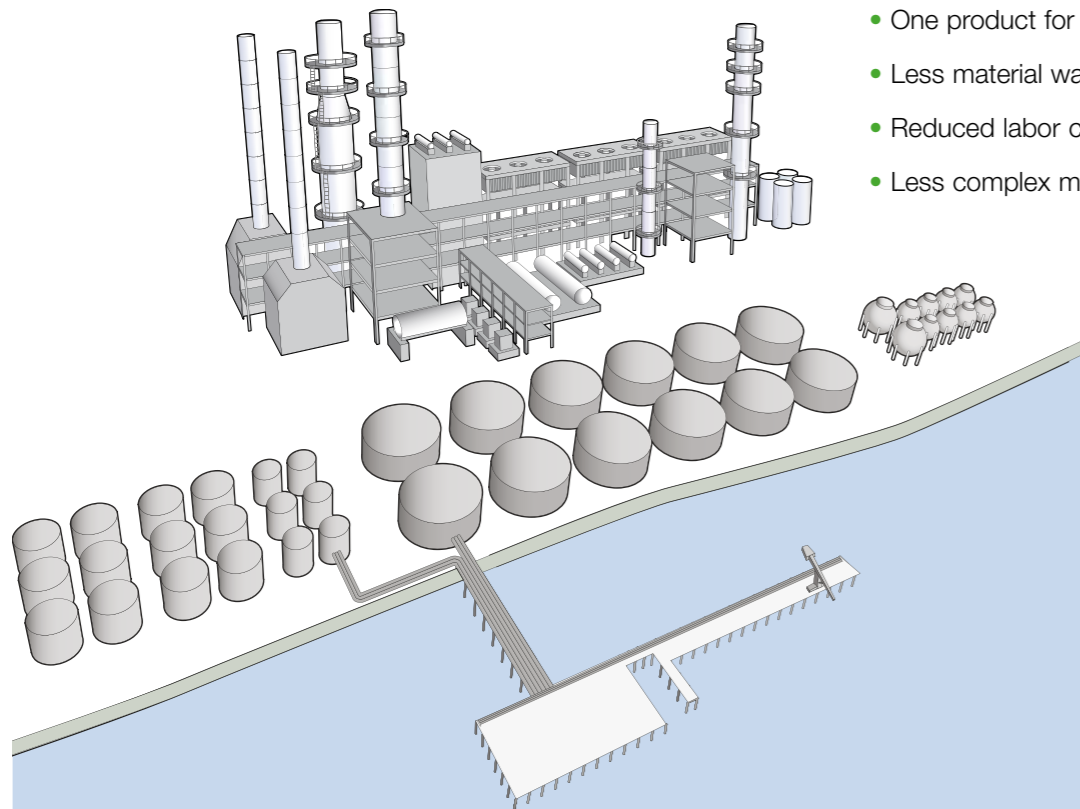
- Low volatile organic compound (VOC) emissions (24 g/L EPA Method 24)
- 98% Solids (by volume)

## Reduce product range complexity

- One product for a variety of temperature ranges
- Less material waste
- Reduced labor costs with single coat application
- Less complex maintenance product schemes

## Application benefits

- Can be applied in temperatures as low as 10°C (50°F)
- Single coat application range of 508 - 1524µm (20 - 60 mils)
- Increased pot life when 'hot potting'
- Better wetting properties and leveling
- Rapid cure (14 hours at 25°C [77°F])



# Enviroline 405HTR

R is for.....

**Reinforced** with glass fiber to comply with the API-652 definition of a reinforced thick film lining

**Reduction** of required material heating during application due to enhanced spray characteristics

**Resistance** to a greater range of chemicals commonly used within the oil and gas sector

**Reduced** lining range complexity, due to its wide range of chemical and temperature resistance

## Technical information

Color	Tan		
Volume solids	98% ±2%		
Film thickness	500-1500µm (20-60 mils) dry equivalent to 510-1531µm (20.4-61.2 mils) wet		
Mix ratio	2 parts: 1 part by volume		
Temperature	Touch dry	Hard dry	Minimum
5°C (41°F)	16 hours	23 hours	23 hours
15°C (59°F)	10 hours	16 hours	16 hours
25°C (77°F)	2.5 hours	6.5 hours	6.5 hours
40°C (104°F)	1.5 hours	2.5 hours	3 hours
VOC's	24 g/L (0.20 lb/gal USA EPA Method 24)		



## Test data

TEST TYPE	TEST METHOD	RESULTS
Abrasion resistance	ASTM D4060 CS17 Wheel - 1kg weight	65 mg/1000 cycles
Pull-off adhesion	ASTM D4541 Adhesion direct to blasted steel substrate	Typical value of 10 mPa (1500 psi)
Chemical resistance	NACE TM-0174 Hydrocarbon phase 1:1 Toluene/Kerosene Water phase 2% NaCl Temperature = 104°C (220°F)	No blistering to substrate Excellent adhesion Color change in water phase
Chemical resistance	ISO 2812 Part 1 immersion @ 104°C (220°F) Crude oil (sweet/sour) (12 months)	No defects
Chemical resistance	ISO 2812 Part 1 immersion @ 71°C (160°F) Bio-diesel (12 months)	No defects
Chemical resistance	ISO 2812 Part 1 immersion @ 100°C (212°F) De-ionized water (12 months)	No defects

The above performance data has been compiled based on present experience of in-service product performance and upon performance data obtained under laboratory test conditions. Actual performance of the product will depend upon the conditions in which the product is used.

[www.international-pc.com](http://www.international-pc.com) | [pc.communication@akzonobel.com](mailto:pc.communication@akzonobel.com)

All trademarks mentioned in this publication are owned by the AkzoNobel group of companies. © Akzo Nobel 2017.  
AkzoNobel has used its best endeavors to ensure that the information contained in this publication is correct at the time of printing.  
Please contact your local representative if you have any questions.  
Unless otherwise agreed by us in writing, any contract to purchase products referred to in this brochure and any advice which we give in connection with the supply of products are subject to our standard conditions of sale.