

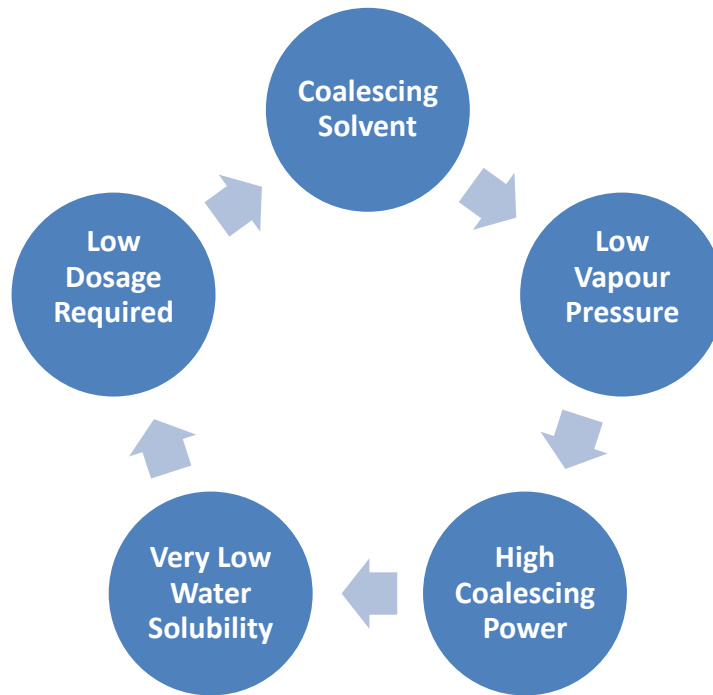
Chemoxy International Ltd

Emissions





Coasol[®] was developed as a coalescent for water-borne paints, and its attributes were quickly appreciated as the market began to formulate into the architectural paints.

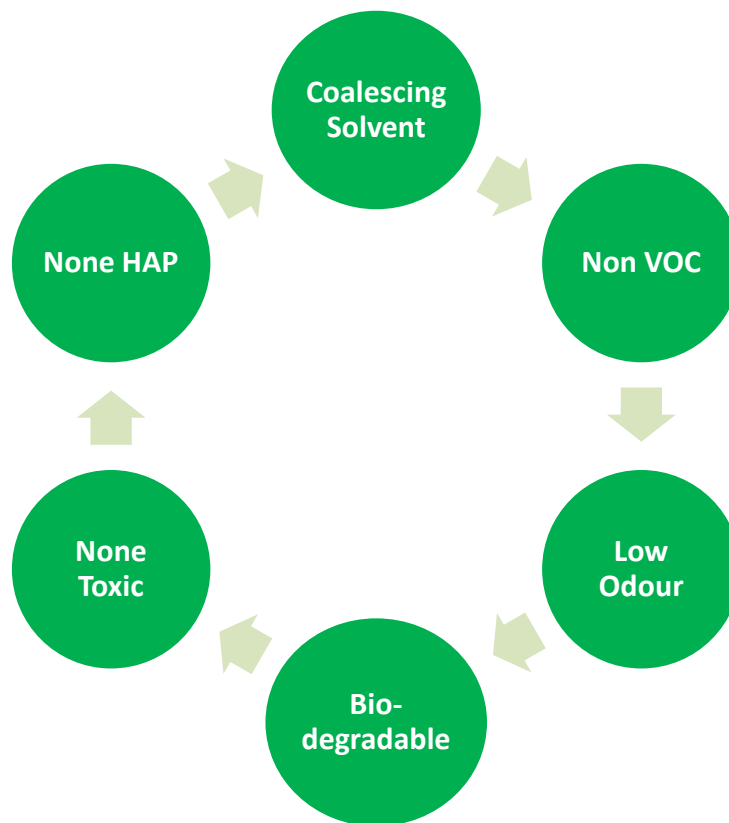


Coasol[®] **290 Plus** was added to the product range to help paint formulators develop a solution to new emission and VOCs regulations being adopted across the world. With consumers and industry also searching to increase sustainability and quality, *Coasol*[®] **290 Plus** enables low odour paints and high quality finishes.

On 1st of January 2012, France adopted a new legislation on emission labelling for all new construction materials including any coatings for walls and floors, paints and lacquers that shows the level and category of emission classification.



Coasol® 290 Plus offers adherence to the legislative requirements in all regulated regions of the world.



Emission profile assessment by ISO1600 method

Numerous legislation and certification are now using method ISO 1600-6, ISO 16000-9 to test the level of emissions which counts any VOC as being any organic compounds that has an elution time between the n-hexane and n-hexadecane (150°C to 286°C).

Coasol® 290 Plus has an elution time after n-hexadecane (C16) and is therefore a SVOC (> n- C16) which is not counted in the total VOC calculation.



Emission profile assessment by ISO1600 method

Coasol®290 Plus enables to achieve low odour and non VOC paints in 3 or 28 days with good durability performances. Here below are the ISO 1600 test results of an interior paint formulated with 12% based on polymer solid or 1.62% weight of coalescing agent (**Coasol® 290 Plus**, TPIB and TXIB), all other parameter remaining the same. The result show clearly that **Coasol® 290 Plus** achieved a labelling of A+ at 3 and 28 days and doesn't contribute in the TVOC in the new French labelling classification

	Coasol® 290 Plus	TXIB	TPIB
3 Days Emission Test Results			
TVOC (C6-C16) in toluene equivalent ($\mu\text{g}/\text{m}^3$)	140	4100	5100
Total VVOC (<n-C6)($\mu\text{g}/\text{m}^3$)	<2	<2	<2
Total SVOC(>n-C16)($\mu\text{g}/\text{m}^3$)	1200	36	8
Labelling	A+	C	C
28 Days Emission Test Results			
	Coasol® 290 Plus	TXIB	TPIB
TVOC (C6-C16) in toluene equivalent ($\mu\text{g}/\text{m}^3$)	11	1600	2700
Total VVOC (<n-C6)($\mu\text{g}/\text{m}^3$)	<2	<2	<2
Total SVOC(>n-C16)($\mu\text{g}/\text{m}^3$)	900	2.4	21
Labelling	A+	B	C



Specification and Physical Properties

The below table shows the specification and physical properties for **Coasol®290 Plus**

	Unit	Specification
Acid number	mg KOH/g	Max. 1.0
Colour, Hazen	-	Max. 25
Appearance	-	Clear, colourless liquid
Water content	% w/w	Max. 0.2
Diester Content	% w/w	Min. 99.0
Chemical and Physical Properties	Unit	Typical Properties
Boiling Range	°C	290 - 310
Density, 20 °C	kg/m ³	957 - 966
Evaporation Rate	nBAc=1	<0.001
Vapour Pressure, 20°C	hPa	Max. 0.004



Coasol® & Coasol® 290 Plus in other directives

Directive of European Union 2004/42/EC	Not VOC	
Green Seal GS 11	Not VOC	
China State Environmental Protection Agency (SEPA)	Not VOC	
Australian Paint Approval Scheme (APAS)D181	Not VOC	
Exempt under EPA Low Vapour Pressure (LVP) / Californian California Air Resource Board (CARB) / MIRUS	Not VOC	California Environmental Protection Agency 
Eco-label	Not VOC	
Non HAPs Clean Air Act Control of Emissions	Not VOC	
ISO 1600 for 3 and 28 days	Not VOC	
B&Q (Kingfisher) Labelling	Not VOC	
Blue Angel	Not VOC	



Applications

Coasol® 290 Plus is a very low odour clear liquid non HAPs Semi volatile organic compound (SVOC). It is a cost effective coalescing agent in water borne latex paints particularly for high gloss system or and high quality low PVC paints. It can also be used solvent replacement in high solids solvent based paints to reduce viscosity and VOCs .

Coasol® & Coasol® 290 Plus are used in numerous sectors such as:

Interior paints	Degreasing solvent
Exterior paints	Oil field solvent
Epoxy floor paints	Paint stripping solvent
Polyurethane paints	Adhesives
Replacement solvent in additives	Construction products
Road marking paints	Marine paints
Pipe paints	Wood flooring varnishes

Coasol® is a cost effective coalescing agent. **Coasol®** is able to achieve low MFFT (Minimum Film Formation Temperature) at lower percentage compare to other coalescing agent. It also gives longer durability with enhanced film hardness with better scrub and humidity resistance.

