Curalite™

Taking cationic to the next level

Perstorp
A Subsidiary of PETRONAS Chemicals Group

Cationic UV Curing technology

A fast growing specialty segment

Radiation Curing is a fast growth technology that is rapidly developing and expanding into new application areas, which include glossy magazines, wood coating, and electronic devices. It is also growing in popularity, in part, because it addresses the current demands on sustainability since it is a low VOC and low energy technology.

What makes the technology even more compelling is the exceptional performance in terms of high line speed and quality.

Taking on the toughest challenges

Cationic UV Curing takes on the toughest challenges, such as printing or coating on tricky substrates or where low migration and exceptionally high quality are demanded. UV light initiates the cationic reaction, but polymerization continues until through cure even in darkness. This ensures a robust quality print finish that lasts irrespective of whether it is metal, plastic, or glass food packaging substrates or even automotive coatings.

Inherent to the technology is also low shrinkage and exceptional flexibility making it ideal for demanding applications such as shrink sleeves.

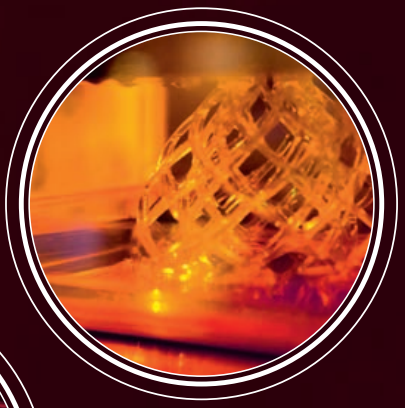
Curalite™ - Designed to enhance Cationic UV Curing

Curalite™ is a product range of Oxetane reactive diluents that bring powerful performance and impressive speed to your Cationic UV Curing formulations. Adding Curalite™ significantly increases the reactivity of your formulation, which in turn boosts the speed of printing or coating line. You can even decrease your formulation costs and increase your competitiveness, as you require less photoinitiator with Curalite™.

If you still need extra performance try our Curalite™ OxPlus, which will cure your need for speed as you get up to 15x faster reactivity in formulations. On top of that, you gain from increased through cure and hardness.

PRODUCT CHARACTERISTICS

Typical properties	Curalite™ Ox	Curalite™ OxPlus
Appearance	Colorless liquid	Colorless liquid
Reactive groups	1 oxetane, 1 hydroxyl	2 oxetanes
Oxetane equivalent weight (g/eq)	116	107
Hydroxyl equivalent weight (g/eq)	116	-
Hydroxyl number (mg KOH/g)	485	-
Molecular weight (g/mol)	116	214
Viscosity at 20°C (mPa.s)	27	15
Color (APHA)	10	9
Acid number (mg KOH/g)	0,2	0,2



CURALITE™ – A POPULAR CHOICE ACROSS MANY CATIONIC APPLICATIONS

- Coatings
- Inks
- Adhesives
- 3D printing

Curalite™ Ox

Give your formulations that extra edge

Cationic UV Curing, as a technology is already a great solution for a number of demanding customer needs. Adding Curalite™ Ox to your formulation you can take cationic to the next performance level. Using between 5 to 25 wt% of Curalite™ Ox allows you to decrease the viscosity of the formulation and can boost the reactivity by up to a factor of 7.

REACTIVITY

- Higher line speed
- Compensates for cationic sensitivity to moisture in the air

INCREASED END PRODUCT QUALITY

- Gives the best combination of flexibility, hardness and chemical resistance

Curalite™ Ox speeds up the reactivity, so you need less photoinitiator, which is an expensive part of your formulation. This resource efficiency enables you to lower the total cost of your formulation making you more competitive.

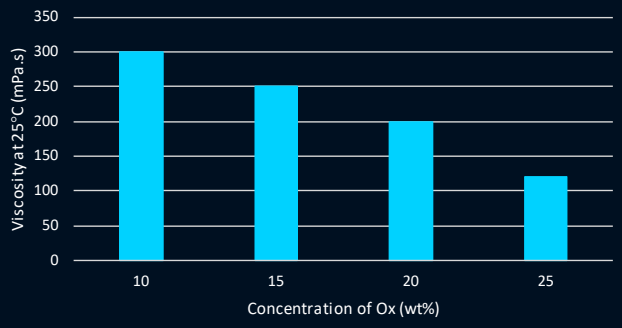
Curalite™ Ox increases the dark cure, which greatly improves the through cure of cationic formulations. This ensures you get a consistent and high-quality result across all the core substrates.

Curalite™ Ox offers outstanding performance in handling and safety. It is clear, colorless, with very low odor and no skin-irritation.

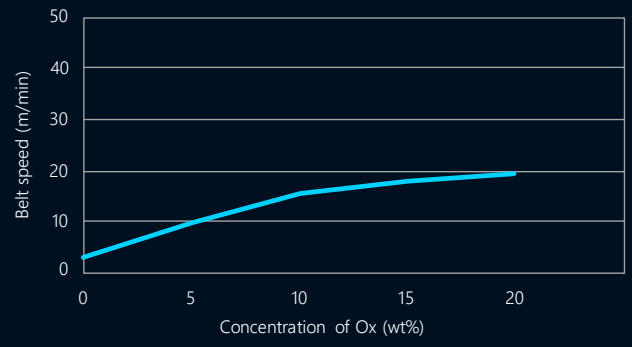
The unique properties of Curalite™ Ox make it the given choice in formulations for applications with high demands like:

- Food packaging where safety, low migration, low odor and scratch resistance are key
- Shrink sleeves where the focus is on superb flexibility
- Coatings for beverage can-bases for long-term resistance, fast processing and customized slip and resistance.

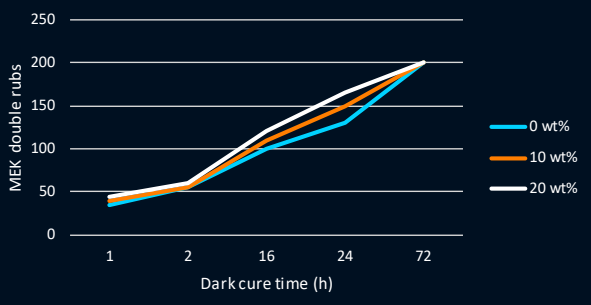
Viscosity



Surface cure (tack free)



Through cure (chemical resistance)



Curalite™ Ox has been formulated with cycloaliphatic epoxy and cationic photoinitiator and cured with a Hg lamp

Curalite™ Pro Ox

Enhance your sustainability profile

For a number of applications where brand owners strive for sustainability profile, you can benefit from our Pro-Environment solutions. All Pro-Environment products are based on a mass balance concept, supporting sustainable sourcing. The actual carbon molecules in the product may not be renewable, but through a third-party certificate, the renewable content is verified. This helps us all support sustainable sourcing of renewable raw material and see the actual savings in CO_2 emissions.

Curalite™Pro Ox comes with an ISCC Plus certificate (International Sustainability & Carbon Certification) certificate to confirm that the biomass used is from a sustainable source. The product performance is unchanged as it is a drop-in product, with no compromise on quality and performance

CURALITE™ IS AVAILABLE IN TWO PARTLY RENEWABLE GRADES

- Curalite™ Pro Ox C20 with 17% renewable content
- Curalite™ Pro Ox C50 with 50% renewable content

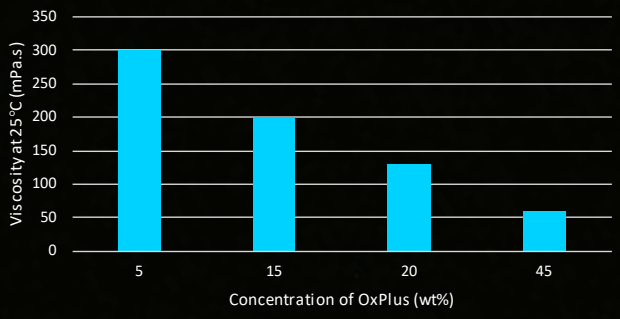
Curalite™ OxPlus

Up to 15x faster reactivity

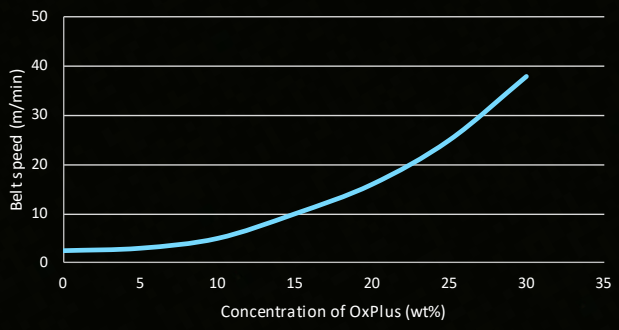
For the applications where only the best performance will do Curalite™ OxPlus is the perfect solution. Offering up to 15x faster reactivity it "cures the need for speed" and the complete through cure ensures outstanding toughness and a superb finish every time. General recommendation is to use between 5-25 wt% Curalite™ OxPlus in your formulation.

Curalite™ OxPlus is one of the very few solutions that can be used to speed up the line in high moisture content environments. You can also use Curalite™ OxPlus in combination with Curalite™ Ox to fine-tune your formulations so that they match your customers' specific demands. For example a formulation of 20wt% Curalite™ Ox and 15wt% Curalite™ OxPlus gives excellent flexibility and through cure.

Viscosity

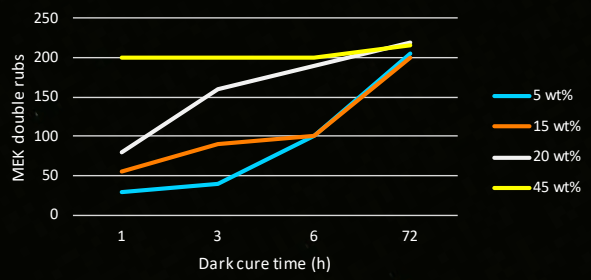


Surface cure (tack free)



Curalite™ OxPlus has been formulated with cycloaliphatic epoxy and cationic photoinitiator, and cured with a Hg lamp

Through cure (chemical resistance)



Your committed partner

Curing your need for speed

Instant benefits

BUSINESS BENEFITS

- European production – with secure supply and availability of fresh material
- Available in various order quantities
- Less amount of expensive photoinitiator needed
- Pro-environment grade for increased sustainability profiles

PERFORMANCE BENEFITS

- Curalite™ oxetanes as efficient reactive diluents to increase curing speed and lower viscosity
- Safe to handle – no skin-irritation and low odor compared to standard acrylates, vinyl ethers and glycidyl monomers
- Enhancing chemical resistance, hardness, and flexibility
- Improving through cure and crosslinking density

PROCESSING BENEFITS

- Up to 15x faster reactivity for higher line speeds
- Improved dark cure for complete through cure
- Possibility to reduce cationic sensitivity to moisture

Your committed partner in Cationic UV Curing

Perstorp has a long history in providing key coating and resin components for many different application areas including Cationic UV Curing. We work closely with you to provide a complete solution that secures quality, performance, and profitability at every step from order to the finished formulation.

Working in partnership with you, we are committed to providing a rapid technical response when you require application or product support. When ordering we offer flexible deliveries suited to your needs, which are delivered with precision and on-time. The consistently high quality of our products and reliable supply allow you to focus on your business without interruption. Our innovation and product portfolio is driven by our customers' challenges and market trends, and we often partner with customers to develop new innovative solutions such as shrink sleeves.

In addition to Curalite™ Ox and Curalite™ OxPlus, and the pro-enviroment grades of Curalite™ Ox Pro you can find from our portfolio a broad range of components for Cationic UV Curing.

One molecule can change everything

Perstorp believes in improving everyday life – making it safer, more convenient and more environmentally sound for billions of people all over the world. As a world leading specialty chemicals company, our innovations provide essential properties for products used every day and everywhere. You'll find us all the way from your car and mobile phone to towering wind turbines and the local dairy farm.

Simply put, we work to make good products even better, enabling sustainable solutions everywhere. We do this with a clear commitment to the Paris agreement and the ambition of becoming Finite Material Neutral. Perstorp is pioneering in Pro-Environment solutions with a comprehensive portfolio of ISCC PLUS certified products with a low carbon footprint that are fully or partly renewable, based on a traceable mass balance concept.

Founded in Sweden in 1881, Perstorp's focused innovation builds on more than 140 years of experience, representing a complete chain of solutions in organic chemistry, process technology and application development. Perstorp maintains a top 1 position in the majority of its product portfolio and operates manufacturing units in Asia, Europe and North America. Perstorp is a wholly-owned subsidiary of PETRONAS Chemicals Group Berhad (PCG), Malaysia's leading integrated chemicals provider and part of PETRONAS Group. Together, we share a passion for progress and will unlock new opportunities for sustainable transformation. ***perstorp.com***

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