

VESTASOL[®]

SPECIALTY SOLVENTS &
INTERMEDIATES



vestasol[®]

vestasol[®]eCO

GO WITH THE ORIGINAL.

 **EVONIK**
Leading Beyond Chemistry

OUR VISION

CROSSLINKERS IS THE BEST PARTNER FOR A SUCCESSFUL AND SUSTAINABLE FUTURE, PROVIDING PIONEERING TECHNOLOGY AND GLOBAL REACH.

ABOUT US

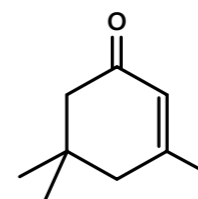
PIONEER IN ISOPHORONE CHEMISTRY

Since inventing isophorone chemistry during our search for new ways to recycle and reuse acetone, Evonik's Crosslinkers business line has continued to develop high-performance isophorone-based products that improve our customers' applications.

For over 60 years we've been your reliable partner and solution provider. With our global production sites we are uniquely placed to meet your local market demands.

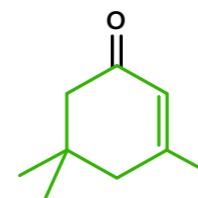
Now, following another important breakthrough we've boosted our broad portfolio of VESTA products with our new reduced emission eCO series for more sustainable solvents, composites and coatings.

TO HELP YOU ADDRESS TODAY'S MARKET AND ENVIRONMENTAL CHALLENGES CHOOSE THE SOLUTION THAT BEST MEETS YOUR PERFORMANCE AND SUSTAINABILITY GOALS.



vesta[®]sol

The classical VESTA grades are based on virgin fossil raw materials



vesta[®]sol eCO

The eCO series is based on renewable raw materials

PRODUCT RANGE

VESTASOL® IP / IP eCO (Isophorone)

APPLICATIONS	BENEFITS
<ul style="list-style-type: none"> Inks Crop protection Chemical syntheses 	<ul style="list-style-type: none"> High boiling Improves levelling Increases gloss Universal solvency

A marvelous raw material

VESTASOL® IP is a starting material for many commercial products used in the agrochemical and disinfectant markets.

Exciting gloss

Brilliant colors cause a sensation. The universal solvency of VESTASOL® IP provides for remarkable gloss in coatings and inks.

To make your crops flourish

VESTASOL® IP plays a remarkable role as a solvent in the agrochemical industry. Its special properties allow formulations that permit a very fine and optimum distribution of the herbicide or pesticide, thereby increasing the effectivity of the active agent.

VESTASOL® TMC-on (Trimethylcyclohexanone)

APPLICATIONS	BENEFITS
<ul style="list-style-type: none"> Intermediates Raw material for chemical syntheses Plastics (e.g., polycarbonate) 	<ul style="list-style-type: none"> High boiling Universal solvency

A wonderful synthesis

VESTASOL® TMC-on is a raw material for a number of chemical syntheses for products used in the plastic and cosmetic industries.

VESTASOL® THN (Tetrahydronaphthalene)

APPLICATIONS	BENEFITS
<ul style="list-style-type: none"> Coatings Greases, oils, waxes, bitumen Floor waxes, shoe polishes Heat transfer liquid Chemical syntheses in pharmaceutical and agrochemical industries 	<ul style="list-style-type: none"> High boiling Improves gloss Improves levelling Autoxidative

For a brilliant appearance and extraordinary adhesion

It dissolves greases, oils, rubber and asphalt, is autoxidative, and works as an oxygen carrier in air-drying oils.

Partnership for a colorful future

The properties of the solvent have to be right if you want high gloss and smooth paint surfaces: Good solvency, improvement of interlayer adhesion: VESTASOL® THN works where you need it.

VESTASOL® DHN (Decahydronaphthalene)

APPLICATIONS	BENEFITS
<ul style="list-style-type: none"> Coatings Greases, resins Floor waxes, shoe polishes Plastics processing Printing industry 	<ul style="list-style-type: none"> High boiling Improves gloss Improves levelling Inert

Knowledge for practical solutions

VESTASOL® DHN imparts good flow and high gloss to inks and coatings. It is suitable as a solvent for rinsing flexographic printing plates.

A special aid

VESTASOL® DHN is an indispensable component in the processing of special plastics.

Product Information

Specification	VESTASOL® IP/IP eCO	VESTASOL® TMC-on	VESTASOL® THN	VESTASOL® DHN		Unit	Measuring Method
Appearance	Clear	Clear	Clear	Clear			Visual
Color number (Hazen)	≤ 50	≤ 15	≤ 20	≤ 10		mg Pt/l	DIN EN ISO 6271 / ASTM D 1209
Purity	≥ 99.0	≥ 98.5	≥ 98.0	≥ 98.0		wt. %	Gas chromatography
Water content	≤ 0.1	≤ 0.2		≤ 0.1		wt. %	DIN 51 777 / ISO 760
Acid content (calculated as acetic acid)	≤ 0.01			≤ 0.01		wt. %	ASTM D 1613
Acid number		≤ 0.1				mg KOH/g	DIN EN ISO 2114
Isophorone		≤ 0.2				wt. %	Gas chromatography
Trimethylcyclohexanone		≤ 1.5				wt. %	Gas chromatography
Decahydronaphthalene			≤ 1.5			wt. %	Gas chromatography
Naphthalene			≤ 0.7			wt. %	Gas chromatography
Typical properties							
Empirical formula	C ₉ H ₁₄ O	C ₉ H ₁₆ O	C ₁₀ H ₁₂	C ₁₀ H ₁₈			
Molecular weight	138.2	140.0	132.2	138.2		g/mol	
				cis isomer	trans isomer		
Solidification point	approx. -8	approx. -10	approx. -31	approx. -43	approx. -30	°C	DIN ISO 3016
Viscosity at 20 °C	approx. 2.6	approx. 2.5	approx. 2.2	approx. 3.4	approx. 2.1	mPa s	DIN 53 015
Solubility parameter at 25 °C	17.9	15.9	19.9	17.6	17.0	(J/cm ³) ^{1/2}	
Heat of evaporation at boiling point	approx. 42.4	35.5	42.3	39.8	38.6	kJ/mol	
Vapor pressure at 20°C	0.4	-	0.24	-	-	hPa	
Vapor pressure at 50°C	-	8	-	1	4	hPa	
Evaporation number	approx. 330	approx. 109	approx. 200	approx. 100	approx. 100		DIN 53 170
Boiling range at 1013 hPa	210 - 216	approx. 189	200 - 209	185 - 195		°C	DIN 53 171
Flash point	approx. 85	approx. 64	71 - 77	approx. 61	approx. 54	°C	DIN EN ISO 2719
Refractive index n _D ²⁵	approx. 1.476	-	approx. 1.539	approx. 1.472			DIN 51 423
Refractive index n _D ²⁰		approx. 1.445	-	-			DIN 51 423
Density at 20°C	0.918 - 0.923	approx. 0.88	0.965 - 0.971	0.870 - 0.895		g/ml	DIN 51 757 / ASTM D 2111



VESTA eCO SOLUTIONS

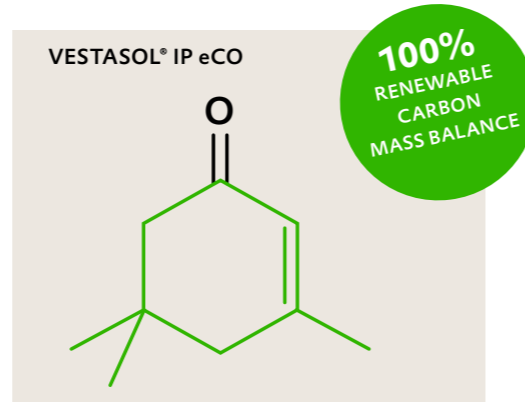
VESTANAT® IP eCO

eCO stands for Evonik's aim to eliminate CO₂ through use of renewable feedstock via mass balance approach.

MASS BALANCE APPROACH

Mass balance involves mixing virgin fossil and renewable raw materials into existing systems and production processes. The renewable amount is then allocated mathematically to specific products and is certified by a neutral third party to verify the use of renewable resources across all stages of production. Mass balance is a way to keep track of the renewable quantities throughout the process and to allocate them to specific products. It allows for large-scale production and enables cost-effective solutions that meet more stringent environmental and sustainability targets.

Mass Balance allows for instant CO₂ reduction in existing plants. Giving green drop-in solutions to our customers at the best possible price.



ESTABLISHED PERFORMANCE

- High boiling
- Improves levelling
- Increases gloss
- Universal solvency
- NEW: LOWER CO₂ PROFIL

BENEFITS

- Drop-in solution
- No compromise in performance
- ISCC-certified



DISCOVER MORE!

Further useful documents and information are available.

www.evonik.com/crosslinkers

GET IN CONTACT!

Our local sales representatives look forward to serving you.

www.evonik.com/crosslinkers-contact



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