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PURASOLV®

GREEN SOLVENTS FOR SAFER AGROCHEMICAL FORMULATIONS WITH SUPERIOR PERFORMANCE

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Green solvents for safer agrochemical formulations with superior performance

Performance from Formulation to Field

PURASOLV® green solvents are a range of lactate esters that provide superior solvency, allowing for more efficient, high-performing agrochemical formulations. These solvents help agrochemical manufacturers create crop protection formulations with high active load, including emulsion concentrates (EC), dispersible concentrates (DC) and oil dispersions (OD). The PURASOLV range enables the development of more complete products combining multiple actives, or the reformulation of existing products to deliver greater benefits.

Corbion Products		CAS number
PURASOLV ML	Methyl L-lactate	27871-49-4
PURASOLV EL	Ethyl L-lactate	687-47-8
PURASOLV NPL	n-Propyl-L-Lactate	53651-69-7
PURASOLV BL	n-Butyl L-lactate	34451-19-9
PURASOLV EHL	2-Ethylhexyl L-lactate	186817-80-1

PURASOLV benefits

- Excellent solvency
- Biobased, green profile
- Safety: Low toxicity, phytotoxicity and odor
- Adjuvancy: Wetting, leaf retention and penetration

Solubility (%w/w) of several active ingredients in PURASOLV EHL, BL, EL (20°C)

Active ingredient	Pesticide type	Class	PURASOLV EHL	PURASOLV BL	PURASOLV EL
Tebuconazole	Fungicide	SBI - Triazole	21.5	31	38
Propiconazole	Fungicide	SBI - Triazole	81	83	84
Prothioconazole	Fungicide	SBI - Other azole	28	42	42
Difenoconazole	Fungicide	SBI - Triazole	53	51	56
Prochloraz	Fungicide	SBI - Other azole	59	60	60
Pyraclostrobin	Fungicide	Strobilurin	20	-	38
Imazalil	Fungicide	SBI - Other azole	58	71	70
Pyriproxyfen	Insecticide	Other IGR	23	-	-
Cypermethrin	Insecticide	Pyrethroid	100	83	84
Abamectin	Insecticide	Natural product	12	-	17
Spinosad	Insecticide	Natural product	20	-	-
Flufenacet	Herbicide	Acetamide	24	-	43

Please contact us for more data regarding the solubility of other active ingredients.

PURASOLV® performance from Formulation to the Field

In Formulation: Green solvency power

Superior solvency

PURASOLV lactate esters deliver excellent solvency with many active ingredients, even at low temperatures. PURASOLV is also compatible with many other agro solvents, so it is highly suitable for use as a co-solvent.

High stability

Stable at cold temperatures (<0°C) and compatible with many agrochemical ingredients on the market, the PURASOLV portfolio allows higher active load and/or lower surfactant levels in formulations. PURASOLV can also inhibit crystallization in formulation, and the range provides a shelf life of at least two years.

Biobased solution

Naturally derived from lactic acid, PURASOLV enables you to grow your product offering beyond traditional chemicals.

For Farmers: Safe and easy handling

Safe handling

PURASOLV is a non-toxic, safer alternative to standard solvents on the market with a friendlier label profile. It exhibits low odor with a fruity smell. PURASOLV EHL, BL & NPL are non-flammable and have a high flashpoint, which makes them safe for storage and transport without requiring additional safety equipment.

Easy emulsification

PURASOLV BL makes emulsification fast and easy, offering improved stability and rapid blooming of EC-formulations upon dilution in water. It also supports the formation of microemulsions and enhances the bioefficacy of the crop protection product.

In the Field: Increased efficacy

Formulation adjuvant

PURASOLV lactate esters can be added to agrochemical formulations in order to modify activity or application characteristics, and to reduce the need for specific adjuvants. Moreover, PURASOLV provides direct crop benefits, including improved wetting properties, enhanced efficacy of the active ingredient through leaf penetration, and increased leaf retention.

Environmentally friendly

PURASOLV is non-toxic to crops and readily biodegradable in the environment. No phytotoxicity occurs when PURASOLV solvents are applied to tomato seedlings, which tend to respond strongly to foliar-applied chemicals. PURASOLV EHL is classified as a non-volatile organic compound.

The safer, greener choice

PURASOLV® lactate esters give formulators a biobased alternative to conventional solvents that is safe for plants, people and the environment, without compromising performance. Having a safe, non-toxic solvent that is in alignment with the direction of regulatory change allows formulators to expand their toolkit while reducing the risk of early product withdrawal from the market.

OMRI registration

PURASOLV BL and EL solvents are OMRI Listed®, helping formulators and farmers meet the growing demand for organic produce and sustainable farming practices.

Regulatory compliance	REACH	EPA (inert ingredient)	OMRI LISTED
PURASOLV ML	✓		
PURASOLV EL	✓	✓ (4A*)	✓
PURASOLV EHL	✓	✓ (4B*)	
PURASOLV BL	✓	✓ (4A*)	✓
PURASOLV NPL	✓	✓	

*List 4A/4B: EPA Lists of Minimum Risk Inert Pesticide Ingredients

Phytotoxicity tests on tomato seedlings

Phytotoxicity tests were performed on tomato seedlings, which respond strongly to foliar-applied chemicals. PURASOLV lactate esters showed no signs of toxicity at concentrations of up to 0.5% (w/w) in the spray mixture.

*Please contact us for detailed test results

Physical properties	MW	Viscosity	Flash Point	Evaporation Rate	Surface Tension	Hildebrand $(J/cm^3)^{1/2}$	Hansen Solubility Parameters $(J/cm^3)^{1/2}$			Solubility in water	Particion Coefficient	Vapor Pressure	% renewable carbon
	g/mol	mPa.s (20°C)	°C/°F	n-BuAc=1	mN/m (25°C)	δ	δ_d	δ_p	δ_h	w/w% (20°C)	log (octanol/water)	mbar (20°C)	
PURASOLV ML	104	3.0 (at 25°C)	58/136	0.26	33.9 (at 20°C)	23.2	16.3	9.1	13.7	miscible	-0.50	3.4	75
PURASOLV EL	118	3.0	56/138	0.22	30.4	21.7	16.0	7.6	12.5	miscible	0.03	2.2	100
PURASOLV NPL	132	3.3	69/156	0.05	29.8	20.6	15.9	6.9	11.2	miscible	0.55	1.0	50
PURASOLV BL	146	3.9	79/174	0.03	29.2 (at 20°C)	19.9	15.8	6.5	10.2	4.5	1.08	0.4	42.9
PURASOLV EHL	202	7.6	113/235	0.00	29.5 (at 20°C)	18.4	15.7	4.5	8.5	0.03	3.12	0.0	27.3

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Interested in solutions for Agrochemicals? Go to corbion.com/PURASOLV

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