ASTROBIO™ EL *the power of nature*

100% Bio-based ethyl ester of natural lactic acid

Technical Data Sheet

Product name: ASTROBIO™ EL
Manufacturer: Liberty Chemicals s.r.l. (Italy)
Contact: info@astrobiosolvent.com



Area of Use:

ASTROBIO™ EL it's our ethyl lactate: bio-based ethyl ester of natural lactic acid (CAS n: 687-47-8). It's fully miscible with water and with many other organic solvents. It has high boiling point, slow evaporation rate and a great solvency power for many kinds of resins, polymers and soils. **ASTROBIO™ EL** it's currently used to make ink cleaners, adhesive removers, hand wipes, paint strippers, graffiti removers and textile stain removers (especially when blended with our **ASTROBIO™ G 4**). It's a valid alternative to many fossil based solvents in the formulation of coatings, laquers, paints, varnishes and inks based on acrylics, epoxies, alkydics, vinylics, phenolics, melaminics, urethanes, polyesters, and ABS resins. It's a safer choice than mineral spirits, MEK or MIBK for cleaning vessels, tanks, semi-bulk bins and reactors. **ASTROBIO™ EL** it's also used in eyewear manufacturing.

Technical Benefits:

- **Outstanding results in eyewear manufacturing**.
- Better cleaning power and reduced solvent usage than many other fossil based solvents.
- Dries completely and leaves no residue.
- **Ideal for the formulation of paints, inks and coatings**.
- **Easily rinsable with water**.
- Easy and inexpensive to distill or recycle.
- **Strong solvency power for different resins, polymers grade and soils.**
- High loading capacity.

Available Packaging:

Drums	IBC	Bulk
206Kg	1030Kg	≥ 10MT
net weight	net weight	net weight

Key Features:

Bio-based solvent according to EN 16575		
Flashpoint	56° C	EN 3679
RER (BuOAc=1)	0,22	ASTRO005[1]
Vap. pressure (20°C)	0,51 kPa	Calculated
Boiling range	145° - 160° C	-

Solvency power:

HSP's	δd	δp	δh	δt	Calculated
	16,70	6,45	11,60	21,33	

Environmental Benefits:

- Readily biodegradable raw materials.
- Slow Climate change: carbon neutral balance.
- Sustainable chemistry: renewable raw materials.
- No ozone depleting chemicals (ODC).
- No environmental hazardous ingredients.
- No hazardous air pollutants.

Health Benefits:

- Aromatics, ketones, paraffins, alogens and terpenics FREE.
- **Safer than other fossil-based solvents due to its CLP and GHS classification.**
- Fruity and pleasant smell.

LIBERTY CHEMICALS s.r.l.
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Codice Fiscale/P. IVA 02253660126 - R.E.A. Varese 241902 - Reg. Imp. 02253660126 - Capitale Sociale € 10.920,00 int. vers.

Guaranteed Specifications

Properties	Standard	ASTROBIO™ EL	Units
Appearence	Visual	Clear colourless liquid	-
Ethyl lactate content	ASTRO007[1]	98	% w/w, min
Acidity (as lactic acid)	ASTRO008[1]	0,1	% w/w, max
Colour	ASTRO001[1]	30	Pt-Co (APHA), max
Specific gravity (20°C)	ASTRO002[1]	1,029 – 1,038	g/mL
Moisture	ASTRO003[1]	0,2	% in weight, max

Technical Performances and properties

Properties	Standard	ASTROBIO™ EL				Units
Chemical composition	-	Ethyl-(S)-2-hydroxypropionate[2]				-
Solvency power: HSP's	Calculated	δd	δp	δh	δt	Mpa$^{1/2}$
		16,70	6,45	11,60	21,33	
Boiling range	-	145 - 160				°C
Flashpoint	EN 3679	56				°C
Evaporation rate	ASTRO005[1]	0,22				RER (BuOAc=1)
Vapor pressure (20° C)	Calculated	0,51				kPa
Dynamic Viscosity (25° C)	ASTRO004[1]	≈ 2,61				mPa.s

Environmental characteristics and Biodegradabilty

Properties	Standard/Reference	ASTROBIO™ EL	Units
Ready Biodegradability[3]	OECD 301 series	> 85	% w/w in 10 days window
Ultimate biodegradability[4]	-	100	% w/w at 67 days
Water hazard	WGK Germany	1	Class
VOC content	Directive 2010/75/UE and Swiss Regulation (814.018)	100	% w/w
	Directive 2004/42/CE	100	% w/w

This product has to be subjected from any industrial or professional user to careful tests, in order to evaluate his effectiveness for expected applications. Our company waives any responsibility in case of any improper usage of this product.

Manufactured in Italy (Europen Union).
ASTROBIO™ is a trade mark of Liberty Chemicals s.r.l. (Italy)

Issued by: ASTROBIO™ division | Liberty Chemicals s.r.l. (Italy).

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Footnotes:

1. Analysis conducted according to an internal standard protocol.
2. All ingredient are REACH registered.
3. Product has not been tested itself to access ready biodegradability, but all raw materials used during manufacture are classified as readily or inherently biodegradable according to one or more of the following OECD guidelines: OECD 301 A, B, C, D, E, F or OECD 302 A, B, C, D.
4. Product has not been tested itself to access ultimate biodegradability, but all raw materials used during manufacture are completely (100%) biodegradable in 67 days or less.