

ASTROBIO™ NS

Bio solvent blend, replacement of NMP and NEP Technical Data Sheet

Product name: ASTROBIO™ NS
Manufacturer: Liberty Chemicals s.r.l. (Italy)
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Area of Use:

Sustainable and plant based bio-solvent replacement of N-methyl pyrrolidone (NMP) and N-ethyl pyrrolidone (NEP) in many industrial applications. It's also used in formulation of coatings, laquers, paints, varnishes, adhesives and inks based on epoxies, acrylics, polyesters, melamines and vinylics resins. It has a great solvency power for nitrocellulose and wood rosins as well. It's very effective as cleaner in industrial settings to remove different kinds of residues and soils. ASTROBIO™ NS can be used as solvent in photoresist stripper formulations and in formulation of jet printing inks. It's also a great choice for formulating bio-based and sustainable paint strippers, PU cleaners, machinery and industrial detergents.

Technical Benefits:

- Very effective for cleaning polyurethanes.
- Reduced evaporation losses: stays on the job longer.
- **Moderate dry time with no film residue.**
- Easy and inexpensive to distill or recycle.
- **Strong solvency power for different resins, polymers grade and soils.**
- **Custom blend available for maximum performances.**
- Excellent flow characteristics in formulation.
- High loading capacity.

Available Packaging:

Drums	IBC	Bulk
218Kg	1090Kg	≥ 10MT
net weight	net weight	net weight



Key Features:

Bio-based solvent according to EN 16575

Flashpoint	81° C	EN 3679
RER (BuOAc=1)	0,002	Calculated
Vap. pressure (20°C)	0,19 kPa	Calculated
Boiling range	151° - 240° C	-

Solvency power:

HSP's	δd	δp	δh	δt	Calculated
	18,00	10,90	7,80	23,40	

Environmental Benefits:

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

Health Benefits:

- Aromatics, ketones, paraffins and alogens FREE.
- Fruity and Pleasant smell.
- **Safer than NMP and NEP due to its hazard statement, GHS and CLP classification.**

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Guaranteed Specifications

Properties	Standard	ASTROBIO™ NS	Units
Appearance	Visual	Clear colourless liquid	-
Colour	ASTRO001 ¹	30	Pt-Co (APHA), Max
Specific gravity (20°C)	ASTRO002 ¹	1,06 – 1,12	g/mL
Moisture	ASTRO003 ¹	0,2	% in weight, max

Technical Performances and properties

Properties	Standard	ASTROBIO™ NS				Units
Chemical composition	-	Blend of organic acids esters ²				-
Solvency power: HSP's	Calculated	δd	δp	δh	δt	Mpa ^{1/2}
		18,00	10,90	7,80	23,40	
Boiling range	-	151 - 240				°C
Flashpoint	EN 3679	81				°C
Evaporation rate	Calculated	0,002				RER (BuOAc=1)
Vapor pressure (20° C)	Calculated	0,19				kPa
Dynamic Viscosity (25° C)	ASTRO004 ¹	≈ 1,81				mPa.s

Environmental characteristics and Biodegradability

Properties	Standard/Reference	ASTROBIO™ NS	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)	51,3	% 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 (European 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 biodegradable according to one or several of the following OECD guidelines: OECD 301 A, B, C, D, E, F.
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.