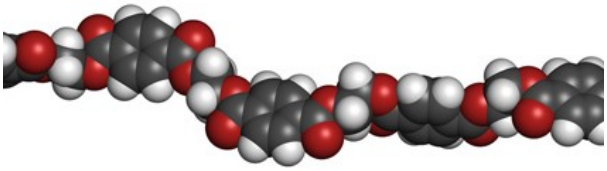
iBiotec®

THE BRAND OF A MANUFACTURER

AEROSOLS and TECHNICAL PRODUCTS for industry

Datasheeet - *Last update: 2018/04/04*



Polyester cleaning solvents

Manufacture and use

iBiotec® FAST CLEAN ORANGE 100

solvent for resin manufacturers

NON-FLAMMABLE, VOC-FREE
HUGE SETTLING POWER
RECYCLABLE, REUSABLE
HALOGEN-FREE, SULPHUR-FREE
SUBSTITUTE for NMP and NEP (CMR)

iBiotec® FAST CLEAN ORANGE 34

solvent for resin users

SLIGHTLY FLAMMABLE
FAST EVAPORATION SPEED
RECYCLABLE, REUSABLE
HALOGEN-FREE, SULPHUR-FREE
SUBSTITUTE for ACETONE and MEK
REDUCED CONSUMPTION

Polyester resins are widely used according to their usages and implementation.
Unsaturated polyesters UP or UPR are included in several families. The most common are:
Aliphatic homopolymers PGA PLA PGL PCL PHA PHB
Aliphatic copolyesters PEA PBS
Semi-aromatic copolyesters FBT PTT PEN (PET and PEC saturated thermoplastics)
Aromatic homo- and copolyesters Polyacrylates
Vinylester resins, occasionally called "polyester-epoxy hybrid resins" often have applications which are identical to polyester applications.
These resins have extensive applications:
For composites
resins for stratification
for automobile equipment
for moulds
for coating (encapsulation)
multi-purpose
for SML compression (sheet moulding compound)
for BMC injection (bulk moulding compound)
for MMC injection (mineral moulding compound)
for CIC (continuous impregnated compound)
for marine - stratification and top coating (gel coats)
For coating
Undercoating primers, varnishes, lacquers, inks, adhesives, etc.
Top coating pain, lacquers, varnishes, etc.
Gel coats
The following implementation procedures are used for composites:
Contact moulding (spiked rollers)
Simultaneous spraying
Low pressure injection (transfer of RTM resin)
Vacuum, infusion, oven moulding
By filament winding
By SMC or BMC compression machines
Cleaning manufacturing pilots, implementation tools, machine environment, machines or fresh residual spots always require the use of solvents.
Note: Although the European Directive on Volatile Organic Compounds (VOC) has been challenged by virtue of its applicability by the Fibre-reinforced Plastics industry regarding the terminology of the stratification of wood and plastics (based on styrene emissions: reactive monomer, in which the unsaturated polyester is dissolved, but which copolymerises with the reactive sites of unsaturated polyester chains to form a three-dimensional solid known as thermosetting plastic), the regulatory framework for using cleaning solvents cannot be disputed.
The criteria and needs relating to the use of unsaturated polyester cleaning solvents are different depending on whether they involve:
RESIN PRODUCTION UNITS, RESIN MANUFACTURERS
normally ICPE (installations classified for environmental protection) concerned by the IED Directive, establishment of a SMP, limitation of VOC emissions, control and recycling of industrial waste. The solvents used must be quick to dissolve when cleaning tanks, reactors and mixers between two batches if there is no on-going sequence or when bleeding pipe or filling systems. This cleaning must be even more thorough when a hardener is manufactured after a resin, in the same pilot.
Typical solvents n-methyl-2-pyrrolidone (NMP), n-ethylpyrrolidone-2 (NEP) and gamma butyrolactone (GBL) give good results but are classed CMR (carcinogenic, mutagenic and toxic to reproduction).
IMPLEMENTATION UNITS or WORKSHOPS, APPLICATORS, USERS
of polyester resins, Applicators, Users
Acetone is very often used in this case. Contrary to the needs of producers, implementation requires mixing a resin and a hardener. The cleaning operation must take the same time as the TECAM gel (mix use duration).
More than 1 tonne of acetone, if stored or used, falls under SEVESO III and must be declared or a request for authorisation must be submitted to DREAL (Classified establishments inspection). The regulatory obligations therefore become the same in terms of the IED directive and the establishment of a SMP (solvent management plan).
Apart from being highly flammable CAT 2, acetone presents no toxic hazard.
Refer to INRS toxicity sheet no. 3 Acetone Case 67641, revised April 2016

- Highly flammable Cat 2 flashpoint -18°C closed tank
- Irritant, irritation of the skin and mucous membranes, severe ocular lesion Cat 2
- Depression of the nervous system in high exposure
- Neurological effects, headaches, vertigo or comas in certain convulsive cases
- Digestive effects, nausea, vomiting, hematemesis
- Specific toxicity for certain target organs
- Narcotic effect Cat 3
- Art. 4412-149 of the Labour Code OEL

RESTRICTIVE EVL TWA 500 ppm STEL 1000 ppm

TECHNICAL DATA SHEET
iBiotec® FAST CLEAN ORANGE 100
solvent for resin manufacturers

TYPICAL PHYSICAL-CHEMICAL PROPERTIES

PROPERTIES	STANDARDS	VALUES	UNITS
Appearance	Visual	Clear	-
Colour	Visual	Yellow	-
Smell	Olfactory	Slight, orange	-
Density at 25°C	NF EN ISO 12185	1.012	kg/m^3
Refraction index	ISO 5661	1.4380	-
Freezing point	ISO 3016	-15	°C
Water solubility	-	0	%
Kinematic viscosity at 40°C	NF EN 3104	2.3	mm²/s
Acid index Ia	EN 14104	<1	mg(KOH)/g
Iodine index	NF EN 14111	0	gI$_2$/100g
Water content	NF ISO 6296	<0.001	%
Residue after evaporation	NF T 30-084	0	%
PERFORMANCE CHARACTERISTICS			
PROPERTIES	**STANDARDS**	**VALUES**	**UNITS**
KB index	ASTM D 1133	>200	-
Evaporation speed	-	>3	hours
Surface tension at 20°C	ISO 6295	34.5	dyne/cm
Copper blade corrosion 100 h at 40°C	ISO 2160	1a	Measured value
Aniline point	ISO 2977	nm	°C
FIRE SAFETY CHARACTERISTICS			
PROPERTIES	**STANDARDS**	**VALUES**	**UNITS**
Flashpoint (closed cup)	NF EN 22719	>100	°C
Autoignition point	ASTM E 659	>200	°C
Lower Explosive Limit	NF EN 1839	0.9	% (volume)
Upper Explosive Limit	NF EN 1839	8.7	% (volume)
Explosive, oxidising agent, flammable, highly or extremely flammable substance content	CLP Regulation	0	%
TOXICOLOGICAL CHARACTERISTICS			
PROPERTIES	**STANDARDS**	**VALUES**	**UNITS**
Anisidine index	NF ISO 6885	<3	-

Peroxide index	NF ISO 3960	nm	meq(O_2)/kg
TOTOX (anisidine index+2x peroxide index)	-	nm	-
CMR, irritant and corrosive substance content	CLP Regulation	0	%
Residual methanol content from transesterification	GC-MS	0	%
Emissions of hazardous compounds, CMR, irritants, corrosive at 100°C	GC-MS	nm	%
ENVIRONMENTAL CHARACTERISTICS			
PROPERTIES	**STANDARDS**	**VALUES**	**UNITS**
Water hazard	WGK Germany	1 without hazard for water	class
Primary CEC biodegradability 21 days at 25°C	L 33 T82	>80	%
OECD easy biodegradability 301 A over 28 days Disappearance of COD	ISO 7827	>80	%
OECD easy and ultimate biodegradability 301 D over 28 days Biodegradation at 67 days	MITI amended	nm	

TECHNICAL DATA SHEET
iBiotec® FAST CLEAN ORANGE 34
solvent for resin users

TYPICAL PHYSICAL-CHEMICAL PROPERTIES

PROPERTIES	STANDARDS	VALUES	UNITS
Appearance	Visual	Clear	-
Colour	Visual	Colourless	-
Smell	Olfactory	Slight, orange	-
Density at 25°C	NF EN ISO 12185	926	kg/m^3
Refraction index	ISO 5661	1.4010	-
Freezing point	ISO 3016	-25	°C
Water solubility	-	>80	%
Kinematic viscosity at 40°C	NF EN 3104	1.2	mm^2/s
Acid index Ia	EN 14104	<1	mg(KOH)/g
Iodine index	NF EN 14111	0	gI_2/100g
Water content	NF ISO 6296	<0.1	%
Residue after evaporation	NF T 30-084	0	%
PERFORMANCE CHARACTERISTICS			
PROPERTIES	**STANDARDS**	**VALUES**	**UNITS**
KB index	ASTM D 1133	>150	-
Evaporation speed	-	8	minutes
Surface tension at 20°C	ISO 6295	29.0	dyne/cm
Copper blade corrosion 100 h at 40°C	ISO 2160	1a	Measured value
Aniline point	ISO 2977	nm	°C
FIRE SAFETY CHARACTERISTICS			
PROPERTIES	**STANDARDS**	**VALUES**	**UNITS**
Flashpoint (closed cup)	NF EN 22719	34	°C

Autoignition point	ASTM E 659	>200	°C
Lower Explosive Limit	NF EN 1839	1.5	% (volume)
Upper Explosive Limit	NF EN 1839	14.0	% (volume)
TOXICOLOGICAL CHARACTERISTICS			
PROPERTIES	**STANDARDS**	**VALUES**	**UNITS**
Anisidine index	NF ISO 6885	<3	-
Peroxide index	NF ISO 3960	nm	meq(O_2)/kg
TOTOX (anisidine index+2x peroxide index)	-	nm	-
CMR, irritant and corrosive substance content	CLP Regulation	0	%
Residual methanol content from transesterification	GC-MS	0	%
ENVIRONMENTAL CHARACTERISTICS			
PROPERTIES	**STANDARDS**	**VALUES**	**UNITS**
Water hazard	WGK Germany	1 without hazard for water	class
Primary CEC biodegradability 21 days at 25°C	L 33 T82	>70	%
OECD easy biodegradability 301 A over 28 days Disappearance of COD	ISO 7827	>70	%
OECD easy and ultimate biodegradability 301 D over 28 days Biodegradation at 67 days	MITI amended	72	

PRESENTATIONS

Bidon 20 L

Drum 200 L

GRV 1000 L

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