OXYGENATED SOLVENTS

AND DERIVATIVES

ARKEMA

The world is our inspiration

Arkema is a global player in Oxygenated Solvents.
The central location of Arkema's plant provides a great deal of logistics flexibility and allows a high level of customer service.
Export is a critical and growing part of Arkema's business.
Its extensive sales and distribution network assures strong local support all over the world.

Its large product range is perfectly suited to serve the diversified markets in which they are used. These markets include fine chemistry, agrochemicals, pharmaceuticals, aromas, fragrances and specific additives synthesis as well as formulations for coatings, concretes, lubricants, cosmetics, industrial cleaning, textiles...

Arkema understands that the use of its products is constantly evolving.
To meet this challenge, the performance and the quality of the products are always improving thanks to processing and applicative development.

Applications

Below are some examples of key applications of Arkema's Oxygenated Solvents in different industries.

Fine chemistry / Synthesis

Arkema's Solvents can be used in the production of intermediates.

HG for fragrances intermediates

IPHO for biocides and thermoset components industry

MIBC for lubricants additives

MIBK for active product intermediates in pharmaceutical industry

MO for fragrances and aromas intermediates

Formulation

Arkema's Solvents have several functions to help formulating in numerous sectors.

MIBK and **DA** in industrial coating as a dilution solvent

IPHO in insecticides, herbicides formulation and dedicated tank cleaning

HG/Hexasol® in concrete admixtures as shrinkage reduction additive, cosmetics (INCI), industrial cleaning, textile dyes, surfactants, lubricants as coupling agent

MIBC in frothers (flotation agent) in metal mining industry...

Physical properties	Units	MethylIsoButylKetone	Isophorone	Mesityl Oxide	Diacetone Alcohol	MethylIsoButylCarbinol	Hexylene Glycol / Hexasol®	TriMethylCycloHexanone
Abbreviation		MIBK	IPHO	MO*	DA	MIBC	HG	TMCHONE
CAS number		108-10-1	78-59-1	141-79-7	123-42-2	108-11-2	107-41-5	873-94-9
Reach registration number		01-2119473980-30	01-2119497282-32	01-2119493103-44	01-2119473975-21	01-2119473979-13	01-2119539582-35	-
Molecular weight	g/mol	100.16	138.21	98.15	116.16	102.18	118.18	140.23
Density at 20°C	kg/dm^3	0.801	0.921	0.854	0.938	0.807	0.922	0.89
Boiling point under 1.013 mbar	°C	116	215.2	129.8	168	131.7	197.5	186
Freezing point	°C	-84	-8.1	-53	-44	-90	-40	-8
Vapor pressure at 20°C	hPa	19	0.4	11	1.3	4.9	0.07	2.0
Solubility solvent in water	weight %	1.9	1.2	2.8	Totally miscible	1.7	Totally miscible	1.0
Solubility water in solvent	weight %	1.9	4.3	3.4	Totally miscible	5.8	Totally miscible	ND
Viscosity at 20°C	cP (mPa.s)	0.6	2.6	0.6	3.2	5.2	38	2.5
Surface tension at 20°C	mN/m	23.9	32.3	28.5	31	23	28.5 at 25°C	ND
Refractive index at 20°C		1.3959	1.4781	1.4458	1.4237	1.4113	1.4276	1.4458
Latent heat of vaporization	kJ/kg	358	307	368	384	406	452	ND
Specific heat (liquid at 20°C)	kJ/kg/k	2.11	1.81	2.15	1.88	2.40	1.99	ND
Heat of combustion (Inferior heat capacity)	kJ/kg	34.820	35.690	33.940	27.710	35.830	29.880	ND
Flash point (closed cup)	°C	16	85	28	58	41	97	67
Self-ignition temperature	°C	460	462	344	640	335	306	430
Flammable mixture with air								
- Lower limit	% volume	1.4	0.8	1.3	1.8	1	1.3	ND
- Upper limit	% volume	7.5	3.8	10.1	6.9	5.5	9	ND
Evaporation rate (n-butyl acetate =1)		1.8	0.04	0.94	0.1	0.33	0.01	ND
Azeotrope with water								
- Boiling point under 1.013 mbar	°C	87.9	99.5	91.8	99.6	94.3	none	ND
- Water content	weight %	24.3	83.9	24.8	87	43.3		
Hansen Solubility Parameters at 25°C	MPa$^{1/2}$							
∂t		17	19.9	18.9	20.8	19.8	25.2	18.9
∂d		15.3	16.6	16.4	15.8	15.2	15.8	17.1
∂p		6.1	8.2	6.1	8.2	2.4	8.4	5.5
∂h		4.1	7.4	6.1	10.8	12.4	17.8	5.9

* The susbtance is registered as an isolated intermediate with strictly controlled conditions as defined in Article 18(4) of Regulation EC N°1907/2006 and must therefore be handled as such.

La Chambre plant

Quality

Arkema has a long history of manufacturing Solvents and Amines at La Chambre plant in the French Alps.

To meet the most stringent requirements, this plant is ISO 9001, 14001 and ISRS8 certified. These certifications represent the highest standards of quality and efficiency.

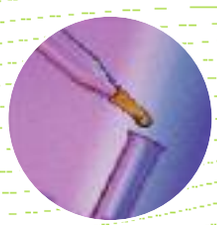
A flexible production tool to meet your current needs

Research & Development

Arkema's process and application laboratories are very closely linked, which allows its teams to quickly respond to the market with new products, as well as continuously optimize and improve production costs and reliability.

Core competencies

Both marketing and customer service staff are based at the plant in La Chambre, which allows Arkema to provide reactive and efficient services to the customers.



Sales and distribution network

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A global chemical company and France's leading chemicals producer, Arkema is building the future of the chemical industry every day. Deploying a responsible, innovation-based approach, we produce state-of-the-art specialty chemicals that provide customers with practical solutions to such challenges as climate change, access to drinking water, the future of energy, fossil fuel preservation and the need for lighter materials. With operations in more than 40 countries, 14,000 employees and seven research centers, Arkema generates annual revenue of €5.5 billion and holds leadership positions in all its markets with a portfolio of internationally recognized brands. The world is our inspiration.

ARKEMA

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