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Chemical Profile: MIBK

USES

Methyl isobutyl ketone (MIBK) is an excellent solvent for resins used in the production of surface coatings. It is also widely used in rubber chemicals for the production of tyres, as a solvent in the manufacture of pharmaceuticals and adhesives and for specialised metallurgical extraction.

MIBK's use as a solvent is fragmented to more than 40 applications. About 16% of global MIBK is used as a solvent in transportation, refurnishing and marine coatings; 8.2% in construction coatings; 7.5% in wood coatings and 7.1% in metal coatings. Globally, 64% of total MIBK output is consumed as a solvent, 18% as an extraction solvent, 10% as rubber processing chemicals and 3% as surfactants.

Supply/demand

Global capacity stood at 366 000 tonne/year in 2005, of which 90 000 tonne/year was in the US, followed by 84 000 tonne/year in western Europe, 59 000 tonne/year in Japan and 43 000 tonne/year in Asia-Pacific (excluding Japan). Global demand for MIBK in 2005 was 287 000 tonne. Asia-Pacific is the largest consumer with demand of 78 500 tonne/year, followed by the US with 62 000 tonne/year, then western Europe with 56 000 tonne/year.

The European market is said to be fairly balanced with steady demand. Consumption into rubber chemicals is described as healthy in both Asia and the US. Demand in the Asian paints and coatings sector, however, remains weak.

Pricing

The price of MIBK depends on its active ingredient content as well as its purity. European prices in quarter one were agreed at €1.07-1.20/kg. Sellers say they will try to lift prices in April to €1.25/kg or higher because of increased feedstock costs although attempts to reach this level failed in March. Quarter two propylene contracts have settled €40/tonne higher, but acetone prices are under pressure from excess supply.

Contract prices in the US for March are $1.46-1.66/kg and in Asia-Pacific are $1.48-1.74/kg. US negotiations for April are continuing but sources expect a flat settlement. Asian numbers are also stable in a subdued market. Prices rose in 2005 by 13% mainly because of increased raw material costs.

Technology

There are two main routes leading to MIBK. The first one comes from acetone condensation through intermediates diacetone alcohol and mesityl oxide. MIBK is also produced from isopropanol in a mixed ketones process with disobutyl ketone (DIBK) and acetone as coproducts. Methyl isobutyl carbinol, DIBK and mesityl oxide are coproduced or recovered during MIBK production processes.

Health and safety

MIBK is a colourless liquid with a characteristic ketone odour. It is highly flammable and vapours may travel to the source of ignition and flashback. It is soluble in water and miscible with most organic solvents and evaporates in air. It irritates the skin, eyes and respiratory tract and in high concentrations leads to nausea, headaches, dizziness and unconsciousness. It is on the hazardous air pollutants list

Outlook

Future demand for MIBK is forecast to remain flat or even decline in developed countries. Demand will slip by 0.1%/year in the US and western Europe, by 0.2%/year in Canada and by 0.5%/year in

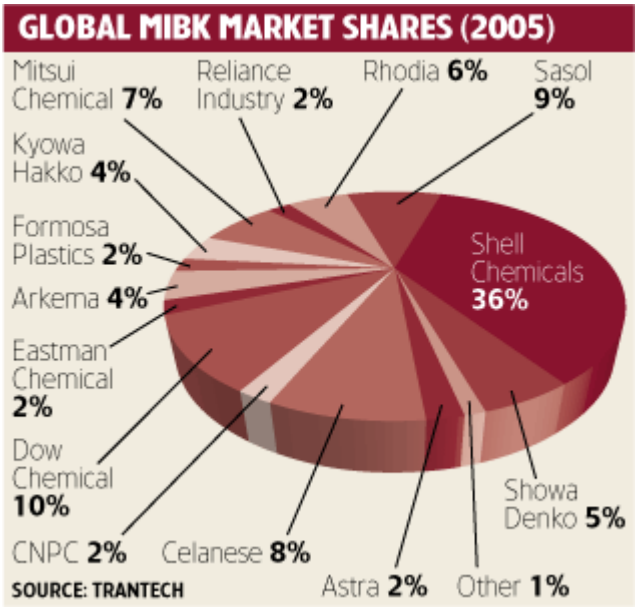
Japan. TranTech predicts annual growth of 2% in eastern Europe, Latin America, Mexico and Australia/New Zealand; 4% in Africa and 4.2% in Asia/Middle East.

Global demand is forecast to grow at 3%/year to 2010. The highest growth of 8%/year is expected in Asia-Pacific. Lee Chang Yung will start up a 40 000 tonne/year plant in Zhenjiang, China, in quarter three 2006. China's Jilin Chemical plans to expand by 15 000 tonne/year this quarter and Mitsui Chemicals is mulling a 50 000 tonne/year plant in China for 2008. Sasol Solvents has begun engineering on a 30 000 tonne/year plant in Sasolburg, South Africa, due in 2008.

Profile last published 15 May 2000

Major global MIBK CAPACITY, '000 tonne/year*

Company	**Location**	**Capacity**
Arkema	La Chambre, France	14
Carboclor	Campana, Argentina	7.7
Celanese	La Cangrejera, Mexico	27.2
Dow Chemical	Institute, West Virginia, US	36
Eastman Chemical	Kingsport, Tennessee, US	9
Jilin Chemical	Jilin, China	15
Kumho P&B	Yeochon, South Korea	17
Kyowa Hakko	Yokkaichi, Japan	15
Lee Chang Yung	Lin Yuan, Taiwan	7
Mitsui Chemical	Iwakuni, Japan	24
Nocil Petrochemicals	Thane, India	7
Rhodia	Paulinia, Brazil	20
Sasol Solvents	Sasolburg, South Africa	27.2
Shell Chemicals	Berre, France	25
	Pernis, Netherlands	45
	Deer Park, Texas, US	45
Showa Denka	Tokuyama, Japan	20
* Excludes 8 plants of less than 2100 tonne/year in India, China and Czech Republic		
Source: TranTech		



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