

# CHEMICAL PROFILE: MIBK

By Aligoli Amir Nazmi Afshar, TranTech Consultants, Inc., July 2014

## 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 tires, as a solvent in the manufacture of pharmaceuticals and adhesives and for specialized metallurgical extraction. MIBK's use as a solvent is fragmented to more than 40 applications. About 18% of global MIBK is used as a solvent in transportation, refurbishing and marine coatings; 9.2% in construction coatings; 8.5% in wood coatings and 8.1% in metal coatings. Globally, 59% of total MIBK output is consumed as a solvent, 16% as an extraction solvent, 13% as rubber processing chemicals and 4% as surfactants.

## SUPPLY/DEMAND

Global capacity stood at 485,000 ton/year in 2013, of which 170,000 in Asia Pacific, followed by 85,000 ton/year in Western Europe, 65,000 ton/year in Japan, 50,000 in Mexico and 45,000 ton/year in the US. Global demand for MIBK in 2013 was 383,000 ton/year. Asia Pacific is the largest consumer with demand of 167,000 ton/year, followed by the US with 60,000 ton/year, then Western Europe with 55,400 ton/year. Asia Pacific market will need additional capacity of 75,000 ton by 2018. Consumption into rubber chemicals is described as healthy in Asia Pacific. However, demand in paints and coatings sector remains weak.

## PRICING

The price of MIBK depends on its active ingredient content as well as its purity. European prices in quarter two were agreed at €1.45-1.62/kg. Contract prices in the US for May were \$1.97-2.24/kg and in Asia-Pacific were ¥12.5-14.70/kg.

## 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.

## OUTLOOK

Future demand for MIBK is forecast to remain flat in developed economies including the US, Western Europe, Canada and Australia/New Zealand, and decline by 0.6% in Japan. TranTech predicts annual growth of 2% in Eastern Europe, Latin America, Mexico; 3% in Africa and 4% in Asia/Middle East.

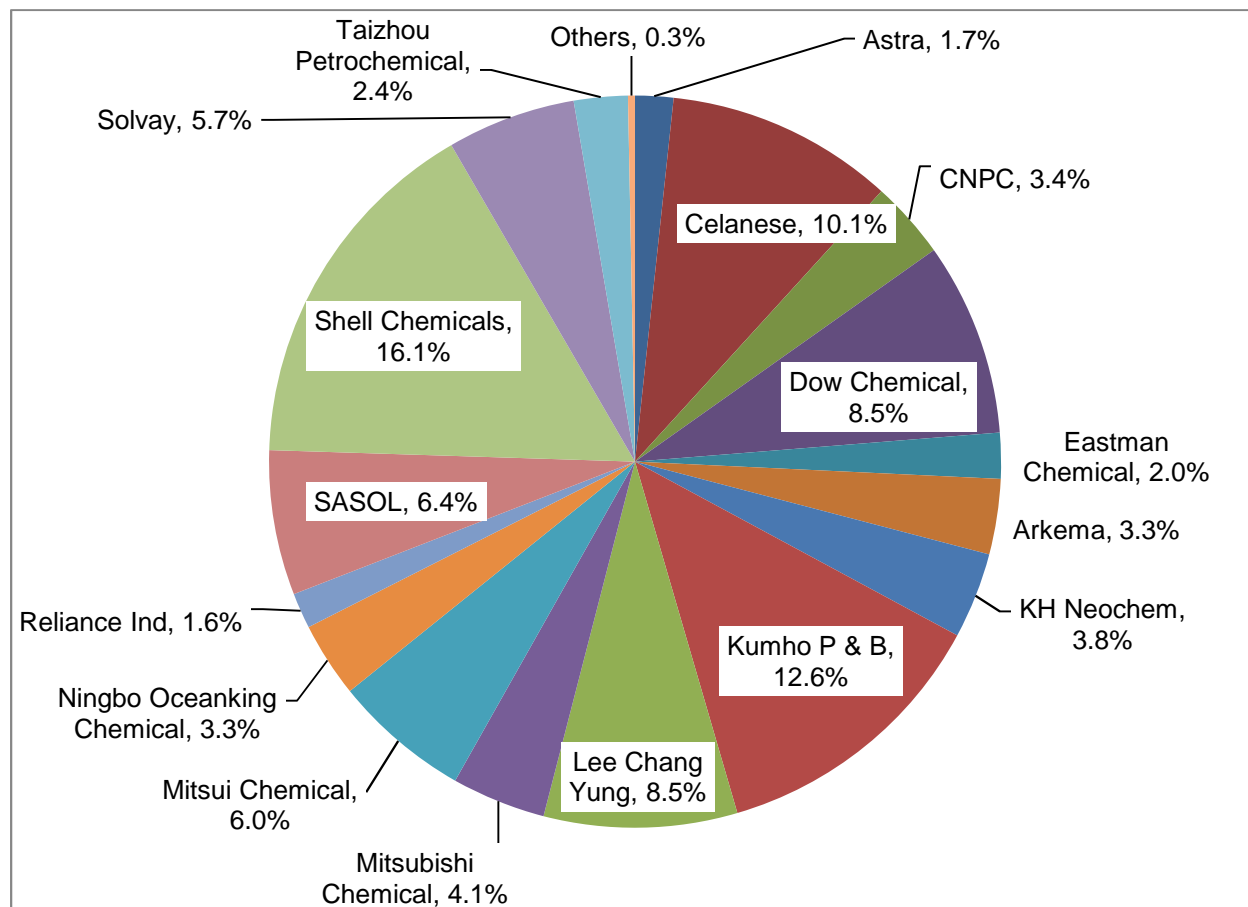
Global demand is forecast to grow at 3%/year to 2018. The highest growth of 6%/year is expected in Asia-Pacific. A 30,000 ton/year plant was started by Zhongneng Petrochemical in China in January of 2014.

## GLOBAL MIBK CAPACITY, '000 TON/YEAR

Company	Location	Capacity
Arkema	La Chambre, France	15.0
Carbochlor	Campana, Argentina	7.7
Celanese	Camgrejera, Mexico	50.0
CNPC (Jilin)	Jilin, China	30.0
Dow Chemical	Institute, VW, USA	36.0
Eastman	Kingsport, TN, USA	9.1
Jinzhou Liulu	Jinzhou, China	1.0
KH Neochem	Yokkivhi, Japan	15.0
Kumho P&B	Yeochon, South Korea	60.0
Lee Chang Yung	Kaohsiung, Taiwan	20.0
Lee Chang Yung (Zhenjiang LCY)	Zhenjiang, China	24.0
Mitsubishi Chemical	Mizushima, Japan	20.0
Mitsui Chemical	Iwakuni, Japan	30.0
Ningbo Oceanking	Ningbo, China	15.0
Reliance Industries	Thane, India	7.0
Sasol	Sasolburg, South Africa	30.0
Shell	Berre, France	25.0
	Pernis, Netherlands	45.0
Solvay	Paulinia, Brazil	25.0
Taizhou Petrochemical	Taizhou, China	20.0
Zhongneng Petrochemical	Jiangsu, China <sup>(*)</sup>	30.0

(\*) Started in January 2014.

## GLOBAL MIBK MARKET SHARE, 2013



For more information about market and site-specific/technology-specific investment and production cost data for MIBK and some 1000 more chemicals, please send your inquiries to [trantech@chemplan.biz](mailto:trantech@chemplan.biz).