



PETRONAS



**Butanol**

# Overview of PETRONAS Chemicals Group Berhad

PETRONAS Chemicals Group Berhad (PCG) is the leading integrated chemicals producer in Malaysia and one of the largest in Southeast Asia. It operates **19 world-class manufacturing sites** in Malaysia, Asia-Pacific, Europe and North America. With a total combined production capacity of **15.4 million metric tons per annum (mtpa)**, it is involved primarily in **manufacturing, marketing and selling a diversified range of chemical products**, including olefins, polymers, fertilisers, methanol, other basic chemicals, derivative products and specialty chemicals.

Listed on Bursa Malaysia with more than three decades of experience in the chemicals industry, PCG is established as part of the PETRONAS Group to maximise value from Malaysia's natural gas resources.

PCG is committed to ensuring that its business practices are in line with globally recognised standards for Economic, Environment, Social & Governance (EESG) practices. It is currently listed in the FTSE4Good Bursa Malaysia (F4GBM) Index and the Dow Jones Sustainability™ World Index.

## PETRONAS Chemicals Derivatives Sdn. Bhd. (PC DSB)

Produces normal-Butanol (NBA) and iso-Butanol (IBA) in Kertih, Terengganu.



6 030-05/2013



ISO 9001:2015, ISO 14001:2015



8 ISO 45001:2018

# Butanol

A clear, colourless, and flammable liquid. Highly miscible with water and most organic solvents.

## Characteristics and Benefits


Butanol provides a proper balance of target properties e.g. viscosity, flowing and levelling, when solvent-based products are formulated.

### Good Solvency

Improves brushability and flow of paints

### Good Volatility

Provides good resistance against blushing under humid condition









Alcohol	Carbon Chain	Miscibility in Water
Methanol	1	High
Ethanol	2	High
Propanol	3	High
Butanol	4	Moderate (balanced)

For higher alcohols, butanol is able to provide proper balance of target properties when solvent-based products are formulated.

1. Viscosity
2. Flowing
3. Leveling
4. Curing rate
5. Coupling agents in waterborne coating

# Applications

## Usage in each industry

Industry	Application	Function	n-Butanol (NBA)	i-Butanol (IBA)
 <b>Paints &amp; coatings</b>	Paints & coatings	Carrier, solvent	√	
	Surface coatings	Automotive polish additive	√	√
 <b>Cleaning products</b>	Degreaser	Solvent	√	
	Polisher and cleaners	Additives	√	
	Varnish remover	Automotive paint cleaner additive	√	
 <b>Ink</b>	Ink	Solvent for dyes	√	√
 <b>Chemical industry</b>	Raw material for chemical production	Chemical intermediate	√	√
 <b>Textile</b>	Textile processing	Solubiliser/Additives	√	
 <b>Fuel component</b>	Gasoline	Additives i.e. octane booster	√	
	Carburator	Prevent icing	√	

# Product Properties

Components	Unit	n-Butanol (NBA)	i-Butanol (IBA)
Butanol	wt%	99.8 min	0.1 max
Iso-butanol	wt%	0.1 max	99.5 min
Propanol	wt%	-	0.1 max
Other C4 compounds	wt%	-	0.2 max
Total C3 compound	wt%	-	0.1 max
Total carbonyl	wt%	-	0.07 max
Acidity	wt%	0.003 max	0.003 max
Water	wt%	0.05 max	0.1 max
Colour	PtCo	5.0 max	5.0 max
Butyl ether	wt%	0.02 max	-
Iron	ppm wt	0.3 max	-
Specific gravity	-	0.810-0.812	-
Suspended matter	-	Pass	-



For more information on PCG products



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