



PETRONAS



Ethonas PEG Polyethylene Glycols

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 Polyethylene Glycols in Kertih, Terengganu.



6 030-05/2013



ISO 9001:2015



ISO 14001:2015
ISO 45001:2018

Ethonas PEG

Polyethylene Glycols

Belongs to a family of water-soluble linear polymer formed by the reaction of ethylene oxide with ethylene glycol.

PCG produces PEG in various grades.

Characteristics and Benefits

Hydroxyl functionality of PEGs can make them highly versatile formulating ingredients.

Water Solubility

Readily-soluble in water, provides clear solution in all mixtures.

Lubricity

Excellent lubricating properties.

Hygroscopicity

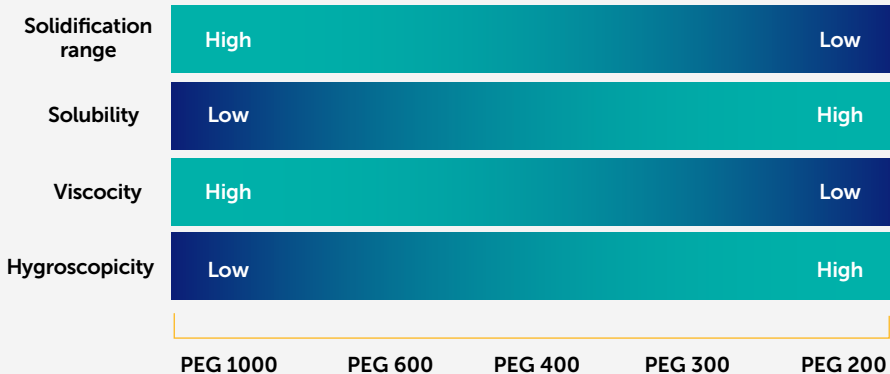
Ability to absorb and retain moisture makes them widely used as humectant.

Viscosity Modifier











Addition of PEG into formulation can greatly modify the final product viscosity.

Physical Properties

PEG is largely dependent on its molecular weight.



Applications

Application	Recommended Ethonas PEG						
	Function	PEG 200	PEG 300	PEG 400	PEG 400-A	PEG 600	PEG 1000
 Antistatic Agent	Hygroscopicity	✓	✓	✓		✓	
 Dye Carrier	Viscosity Modifier, Solvency	✓	✓	✓		✓	
 Lubricants	Lubricity	✓	✓	✓		✓	✓
 Inks	Water Solubility, Viscosity Modifier, Lubricity	✓	✓	✓		✓	
 Adhesives	Viscosity Modifier, Freezing/Melting Range	✓	✓	✓		✓	
 Industrial	Chemical Intermediate	✓	✓	✓		✓	✓
 Agrochemicals	Water Solubility, Solvency	✓	✓				
 Personal Care	Hygroscopicity				✓		
 Pharmaceutical	Carrier				✓		
 Ceramics	Water solubility, viscosity modifier, solvency, lubricity	✓	✓	✓		✓	

Product Properties

Components	Unit	Ethonas PEG 200	Ethonas PEG 300	Ethonas PEG 400	Ethonas PEG 400-A	Ethonas PEG 600	Ethonas PEG 1000
Average no of EO	-	4	6	8	8	12	20
Molecular weight (MW)	-	190-210	285-315	380-420	380-420	570-630	950-1050
pH (5% aq at 25°C)	-	4.5-7.5	4.5-7.5	4.5-7.5	4.5-7.5	4.5-7.5	4.5-7.5
Colour	PtCo	25 max	18 max	18 max	18 max	18 max	18 max
Water	wt%	0.5max	0.5max	0.5max	0.5max	0.5max	0.5max
Acidity, as Acetic	wt%	0.02 max	0.02 max	0.02 max	0.02 max	0.02 max	0.02 max
Viscosity @ 98°C	cSt	4.0-4.8	5.4-6.4	6.8-8.0	6.8-8.0	9.9-11.3	16.0-19.0
Total EG, DEG and TEG	wt%	-	-	-	0.3 max	-	-



For more information on PCG products



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