



PETRONAS



Ethylene 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 Glycols Sdn. Bhd. (PC GSB)

Produces Ethylene Glycols in Kertih, Terengganu.



6 029-05/2013

ISO 9001:2015, ISO 14001:2015,
ISO 45001:2018 & ISO 17025:2017*

*Certification is only for MEG

Ethylene Glycols

Colourless, practically odourless, and low viscosity. Completely miscible with water, alcohol, and in many organic liquids.

PCG produces Monoethylene Glycols (MEG) and Diethylene Glycols (DEG) in various grades.

Characteristics and Benefits

Ethylene Glycols are important organic compounds used in a wide range of industrial processes, with its versatile properties and functionalities.

High Reactivity

High reactivity of ethylene glycols benefited from their hydroxyl group provides opportunities for various derivatives production i.e. esters.

Water-Soluble

Excellent solvents for many organic compounds and complete water-soluble.







Hygroscopic

Ability to absorb and retain moisture from the air makes them widely used as humectants.

Anti-Freeze

Ability to depress the freezing point of water which make it a well-known choice as an anti-freeze agent in the automotive industry.

Applications

| Industry | Application | Function | MEG | DEG |
|---|---|----------------------------|-----|-----|
|  Packaging | Polyethylene terephthalate (PET) Resin Production | Chemical intermediate | • | |
| | Ester for plasticiser | Chemical intermediate | | • |
|  Automotive | Coolant | Base fluid/ Anti-freeze | • | • |
| | Brake fluid | Viscosity enhancer | • | • |
| | Air-conditioning system | Heat transfer agent | • | |
|  Textiles | Polyester resins & textile fibres | Chemical intermediate | • | |
| | Textile fibres, adhesives & glue | Humectant | • | • |
|  Oil & Gas | Natural gas processing | Hydrate inhibitor | • | |
| | Enhance octane number in gasoline | Octane booster agent | • | |
|  Paints & Inks | Latex paint | Coalescing agent | • | • |
| | Printing inks | Humectant | • | • |
|  Agriculture | Pesticide | Inert ingredient | • | • |

Product Properties

| Components | Unit | MEG Polyester | MEG Industrial | MEG Iron & Chloride Free | MEG Anti-freeze | MEG LFG 90% | MEG LFG 95% | DEG High Purity | DEG Polyester | DEG Industrial |
|------------------------|--------|---------------|----------------|--------------------------|-----------------|-------------|-------------|-----------------|---------------|----------------|
| Ethylene Glycols | wt% | 99.9 min | 99.9 min | 99.0 min | 95.0 min | 90.0 max | 95.0 max | 0.20 max | 0.2 max | - |
| Diethylene Glycols | wt% | 0.05 max | 0.1 max | 0.1 max | 5.0 max | - | - | 99.0 min | 99.0 min | 99.0 min |
| Triethylene Glycols | wt% | - | - | - | - | - | - | 0.5 max | - | - |
| Acidity | wt% | 0.002 max | 0.002 max | 0.005 max | 0.01 max | - | - | 0.002 max | 0.005 max | 0.005 max |
| Water | wt% | 0.05 max | 0.10 max | 0.1 max | 0.5 max | - | - | 0.1 max | 0.2 max | 0.2 max |
| Colour | PtCo | 5.0 max | 10.0 max | 10.0 max | 25.0 max | 10.0 max | 10.0 max | 10.0 max | 15.0 max | 15.0 max |
| Iron | ppm | 0.1 max | 1.0 max | 0.1 max | - | - | - | 0.5 max | - | - |
| Chlorides | ppm | 0.5 max | - | 0.2 max | - | - | - | - | - | - |
| UV Transmittance 220nm | %T | 70.0 min | - | - | - | - | - | - | - | - |
| UV Transmittance 275nm | %T | 90.0 min | - | - | - | - | - | - | - | - |
| UV Transmittance 350nm | %T | 98.0 min | - | - | - | - | - | - | - | - |
| Spec resistivity | mho-cm | - | - | 3-10 | - | - | - | - | - | - |



For more information on PCG products



Connect with the team