

GLOSSARY OF TECHNICAL TERMS

This glossary contains explanations of certain terms used in this prospectus in connection with our Group and our business. The terms and their meanings may not correspond to standard industry meaning or usage of these terms.

“acetic acid”	CH ₃ COOH, an organic acid which gives vinegar its characteristic taste. The pure acid is a colourless, vicious liquid
“adhesive”	a compound in a liquid or semi-liquid state that adheres or bonds items together
“AEO surfactant(s)”	also known as fatty alcohol polyoxyethylene ether, a type of non-ionic surfactant commonly used in the production of household liquid detergent and as an intermediate to produce AES, which is in turn commonly used in the shampoo industry
“AES”	a compound known as sodium fatty alcohol ether sulphate, which is used to produce households and industrial grade cleaning products such as soap
“AESA”	a compound known as ammonium lauryl ether sulphate, which is used to produce liquid detergent and different types of shampoo
“air separation plant”	machinery which separates and purifies air into nitrogen, oxygen and argon in gaseous state
“aliphatic solvents”	a mix of normal paraffins (also known as alkane hydrocarbons), isoparaffins and cycloparaffins. The word “aliphatic” generally used as a descriptive term for chemical compounds composed of straight chain molecules. They are used in odourless paint, adhesives, wood treatments, tyres, cosmetics etc.
“anionic surfactant”	a surfactant that contains a negatively charged head and reacts with positively charged water hardness ions, such as calcium and magnesium
“apoprotein(s)”	a protein together with a prosthetic group forms a particular biochemical molecule such as hormone or enzyme
“aqueous solution”	a solution in which water is a major constituent besides the organic material
“argon”	the chemical element of atomic number 18, an inert gaseous element of the noble gas group. Argon is the most common noble gas, making up nearly one percent of earth’s atmosphere

GLOSSARY OF TECHNICAL TERMS

“Brent Crude Oil Price”	Brent Crude oil is sourced from the North Sea and forms a benchmark for oil production from Europe, Africa and the Middle East. The price of Brent Crude oil provides a reference oil price measured in US\$ per barrel
“carbon dioxide”	CO ₂ , a colourless, odourless gas produced by burning carbon and organic compounds and by respiration
“CAS number”	a unique numerical identifier issued by the American Chemical Society for chemical elements, compounds, polymers, biological sequences, mixtures and alloys
“catalyst”	a substance that speeds up a chemical reaction, but is not consumed by the reaction
“CFR”	cost and freight. The seller is responsible for the payment of freight to carry goods to a named destination, as agreed with the buyer
“consumer chemicals”	chemicals used as ingredients to produce personal care consumer products
“degreasing agent(s)”	a substance which removes excess grease or fat
“demulsifier(s)”	a chemical used to break emulsions
“dichloroethane inhibitor”	a chlorinated hydrocarbon which slows down or prevents a particular chemical reaction or reduces the activity of a particular reactant, catalyst or enzyme. This is used in the ethylene oxide production process to avoid deep oxidation of ethylene
“double-circuit electricity power supply”	a more reliable power supply in comparison with a single circuit electricity system in that double circuits can provide more power and introduce a level of redundancy. In the case of emergency where one of the two circuits fail, the other half will remain capable of transmitting electricity
“downstream product(s)”	in relation to the Group’s operations, products derived with ethylene oxide being its main constituent, including ethylene glycol and surfactants etc.
“electrolyte”	a substance whose aqueous solutions conducts electricity
“emulsifier”	an additive used to stabilise a fine dispersion of minute droplets of one liquid in another in which the liquid is not soluble or miscible

GLOSSARY OF TECHNICAL TERMS

“epoxide”	an organic compound whose molecule contains a three-membered ring involving an oxygen atom and two carbon atoms, simple epoxides include ethylene oxide or oxirane
“epoxyethane”	a synonym of ethylene oxide and oxirane
“ethanolamines”	C_2H_7NO , a toxic, flammable, corrosive, colourless, viscous liquid
“ether”	a pleasant-smelling colourless volatile liquid that is highly flammable
“ethylene”	a flammable hydrocarbon gas of the alkene series, occurring in natural gas, coal gas and crude oil. It is used in chemical synthesis, and is an important component of the production of ethylene oxide
“ethylene glycol”	a downstream product of ethylene oxide, colourless viscous hygroscopic liquid used as an antifreeze, in the manufacture of polyesters etc.
“ethylene oxide”	a flammable toxic gas used as an intermediate and fumigant. In this prospectus, it is also referred to as “epoxyethane” and “oxirane”
“fatty alcohol”	any of various alcohols derived from plant or animal oils and fats that are largely used in the detergent industry
“fractionation”	separation of a mixture into separate components
“glycol ethers”	a class of high production volume chemicals with wide spread industrial applications as solvents and chemical intermediates. Most glycol ether compounds are clear, colourless liquids. Some glycol ethers have mild pleasant odours or no smell at all, whilst others have strong odours. Glycol ethers are widely used industrial solvents, and may be used as an ingredient in products such as coatings, cleaners, brake fluids, perfumes and cosmetics
“hard water”	water that has high dissolved mineral content that may interfere with some industrial processes
“hydrocarbons”	a compound of hydrogen and carbon, such as any of those which are the chief components of petroleum and natural gas

GLOSSARY OF TECHNICAL TERMS

“ICIS”	an information provider for the chemical and oil industry that provides, amongst other information, ethylene price quotation, which is widely adopted in the industry as a benchmark price. ICIS is operated by Reed Elsevier Group plc, a world leading provider of professional information whose shares are listed on the London Stock Exchange
“levelling agent(s)”	a substance which is added to the dyebath to promote level dyeing
“ISO 9001”	requirements for quality management systems provided by the International Organisation for Standardisation. It is now firmly established as the globally implemented standard for providing assurance about the ability to satisfy quality requirements and to enhance customer satisfaction in supplier-customer relationships
“multi-tubular catalytic reactor”	machinery used in the oxidation of ethylene in producing ethylene oxide. The reactor consists of large bundles of any tubes that contain catalyst spheres or rings
“nitrogen liquefaction plant”	machinery which converts gaseous nitrogen into liquid nitrogen
“non-ionic surfactant”	a surfactant that does not dissociate in water due to its non-ionic characteristics
“oxidation”	the process or result of the chemical combination of a substance with oxygen
“oxirane”	an synonym for ethylene oxide and epoxyethane
“petrochemical”	relating to or denoting substances obtained by the refining and processing of petroleum or a natural gas
“phospholipids”	lipids containing a phosphate group in its molecule
“plasticiser”	a substance (typically a solvent) added to a synthetic resin to produce or promote plasticity and flexibility and to reduce brittleness
“polar solvent(s)”	a liquid consisting of molecules with a dipole
“polypropylene pall rings”	plastic packing used in tower plants for processes such as absorption, scrubbing and stripping
“re-absorption tower”	a vertical tube in which a rising gas is partially absorbed by a liquid in the form of falling droplets

GLOSSARY OF TECHNICAL TERMS

“scrubber”	a device that can be used to remove water droplets and particulates
“selectivity range”	a means of measuring how well a catalyst separates all the by-products in ethylene oxidation, including ethylene oxide, by measuring the level of purity of the separated by-products
“solubiliser”	a substance which improves the solubility of one or more product ingredients
“steam stripping”	the process of using steam as a stripping vapour for the separation of insoluble or slightly soluble compounds from water
“surfactant(s)”	a substance which tends to reduce the surface tension of a liquid in which it is dissolved
“synthetic latex stabiliser(s)”	a substance made by chemical synthesis used to preserve the integrity of latex by preventing it from coagulating
“synthetic resin”	a solid or liquid synthetic organic polymer used as the basis of plastics, adhesives, varnishes or other products
“vacuum dehydration”	the process of reduction of water in a substance under low pressure to prevent the degradation