

Glossary

Chemicals

AAA	Alkylalkanolamines: in this report the term AAA is used to refer to MMEA, MDEA and DMAE only. These chemicals are derived from combining methylamines with either EO , CO or methyl formate , hydrochloric acid and EO . They are used in the downstream applications including water and gas treatments, and fabric softeners, dyes and pharmaceuticals.
Ammonia	A caustic water-soluble alkaline gas, which is commonly produced from natural gas, air and steam; formula NH_3 .
Betaine	Trimethyl glycine, a versatile molecule extracted from sugar beets, with a wide range of applications in foodstuffs, dietary supplements, pharmaceuticals, dental products, cosmetics and for fermentation purposes; $(\text{CH}_3)_3\text{NCH}_2\text{COO}$.
Choline chloride	A chemical manufactured from TMA , hydrochloric acid and EO or TMA with ethylene chlorohydrin and also known as vitamin B4, used as an additive in animal feed; formula: $[(\text{CH}_3)_3\text{NCH}_2\text{CH}_2\text{OH}]\text{Cl}$.
CO	Carbon monoxide: colourless, poisonous gas formed by the partial oxidization of carbon; formula CO .
DMA	Dimethylamine: a colourless flammable gas, used as a raw material for the manufacture of DMAE and DMF , which are in turn used to manufacture products such as solvents, treatments for water effluent; formula $(\text{CH}_3)_2\text{NH}$.
DMAE	Dimethylaminoethanol, also dimethylethanolamine colourless liquid manufactured from DMA and EO , used in water and effluent treatment and paper making; formula $(\text{CH}_3)_2\text{NCH}_2\text{CH}_2\text{OH}$.
DMF	Dimethylformamide: a flammable liquid derived from DMA and CO or methyl formate used as a solvent; formula $(\text{CH}_3)_2\text{N}.\text{O}.\text{CO}.\text{H}$.
EO	Ethylene oxide : an unstable odourless flammable gas produced by the reaction of ethene (ethylene) and oxygen, and be used directly as a sterilant, although predominately used as an intermediate for a wide range of chemicals; formula $2(\text{CH}_2)\text{O}$.
Ethanol	Ethyl alcohol: a colourless liquid which is miscible with water, which is used as fuel and in a wide variety of industrial processes. Ethanol may be produced by the fermentation of sugars, or more commonly for industrial applications by the oxidation of ethene; formula $\text{CH}_3\text{CH}_2\text{OH}$.
Ethylene oxide	See EO .
Glycol	Any of a class of organic compounds of the alcohol family in which two hydroxyl groups (OH) are attached to different carbon atoms.

Hydrochloric acid	Corrosive non-oxidizing acid soluble in benzene, alcohol, ether and water; formula HCl.
Hygroscopic	Having the tendency to absorb moisture from humid air.
IPLAs	Isopropanolamines, another class of amine derivatives, produced by reacting ammonia with propylene oxide. These can sometimes be produced in swing plants used to produce methylamines, (see glossary below).
MDEA	Methyldiethanolamine: a colourless liquid manufactured from MMA and EO and used in gas treatment and fabric softeners; formula $\text{CH}_3\text{N}(\text{CH}_2\text{CH}_2\text{OH})$.
Methanol	Water-soluble alcohol also known as methyl alcohol, predominately produced from (methane) in natural gas and steam via syngas. Mainly used in the production of downstream derivatives such as methanal (formaldehyde), but also directly as a solvent and antifreeze; formula CH_3OH .
Methyl formate	A clear liquid ester produced from methanol and methanoic acid (formic acid). Used primarily as an industrial solvent for coatings of fibres, especially quick-drying finishes, but may also be used in insecticides and pharmaceuticals; formula HCOOCH_3 .
Methylamines	A group of three chemicals formed by the reaction of ammonia and methanol at high temperature and pressure, namely MMA , DMA and TMA .
Methylamine derivative	A product formed from a chemical reaction involving a methylamine .
MMA	Monomethylamine: a flammable gas, manufactured from methanol and ammonia ; formula CH_3NH_2 .
MMEA	Monomethylethanolamine: a flammable liquid manufactured from EO and MMA used as brightening agent in coatings; formula $\text{CH}_3\text{NHCH}_2\text{CH}_2\text{OH}$.
Silica	Silicon dioxide: found in several physical forms including silica gel, which is a granular, porous and hygroscopic form of silica made synthetically from sodium silicate; formula SiO_2 .
Syngas	Synthesis gas (syngas) produced from methane (natural gas). Syngas consists of a mixture of carbon monoxide and hydrogen.
TMA	Trimethylamine: a colourless extremely flammable gas manufactured from EO and MMA ; formula $(\text{CH}_3)_3\text{N}$.
VOCs	Volatile organic compounds: the classification given to a group of carbon-based chemicals, usually derived from petrochemicals. VOCs readily vaporize at room temperature.

Other terms and abbreviations

Act	Enterprise Act 2002.
Air Products	The Air Products group of companies, of which Air Products and Chemicals Inc is the parent.
APCI	Air Products and Chemicals Inc.
APCT	Air Products and Chemicals Teesside Ltd.
BASF	BASF Aktiengesellschaft.
Billingham	Former ICI plant for the production of methylamines and derivatives now owned by Air Products .
Catalyst	A substance that increases the rate of a chemical reaction, without being consumed or produced by the reaction.
CC	Competition Commission.
Chocques Agreement	A manufacturing agreement dated 2 February 1998 between ICI C&P France SA (an ICI group company) and APCT . APCT provides ICI with raw materials which it converts to AAAs and IPLAs at its plant at Chocques in northern France.
Debottlenecking	Increasing the total capacity of a plant through a selective investment in just one part of the production process where that is currently the constraint on the overall production capacity.
Dedicated plant	Manufacturing plant designed for the production of a single product or chemical.
EEA	European Economic Area: the area comprising of the countries of the European Union, Iceland, Liechtenstein, and Norway.
EM&D business	European Methylamines and Derivatives business.
ICI	Imperial Chemical Industries PLC.
OFT	Office of Fair Trading.
PIERS	United States Port Import Export Reporting Service: a database of import and export information on the cargoes moving through ports in the USA, Mexico, Latin America and Asia, collected by a private organization.
R&D	Research and development.
Reactor	A piece of equipment in which an industrial chemical reaction is carried out.
Regional	Except where the context indicates otherwise, the term 'regional' is used to mean a geographic region which is wider than national.

Swap agreement	Reciprocal product exchange agreement between two companies, whereby each undertakes to supply the other's plants in a region with their own products on a like-for-like basis. (For example, company A supplies product for company B's plants in the USA; and company B supplies company A's plants in Europe.)
Swing plant	A chemicals production plant which can produce different products or product mixes in different campaigns. It has to be cleaned and refilled with differing feedstocks between campaigns.
Taminco	Taminco NV.