

## Five Operating Segments shaping Solvay's portfolio

### Consumer Chemicals

Consumer Chemicals serves the consumer products markets. Its strategy is based on the development of a sustainable offering suited to the major market mega trends of demographic growth, emerging markets' increasing purchase power, the appearance of new modes of consumption and a demand for safer, more sustainable and bio-based solutions.

#### **NOVECARE**

Solvay Novecare offers solutions based on specialty surfactants, polymers, amines, solvents, guar and phosphorus derivatives for the agrochemicals, coatings, home & personal care, industrial manufacturing, and oil & gas industries. Novecare strengthened its surfactant position with the successful acquisitions of US-based personal care manufacturer the McIntyre Group, China's leading amines and surfactants producer, Feixiang Chemicals and lately with Sunshield Chemicals Limited, an Indian surfactants producer. Based in Cranbury, New Jersey, Novecare employs more than 3,300 professional and operates 25 production sites and 7 R&D centers around the world.

#### **AROMA PERFORMANCE**

Aroma Performance, the world's largest producer of diphenols and derivatives, designs vanilla flavors for the Food industry, and building blocks for the pharmaceutical, agro and electronics markets, along with monomer stabilizers for the petrochemical industry. The GBU's five manufacturing sites around the world ensure a close geographical presence alongside its customers. In 2012, the GBU increased its production capacity for fluorinated compounds to keep pace, in particular, with increasing sales of LiTFSI lithium salt, an essential component of Li-ion batteries used in electric vehicles. It has also launched Govanil™, an innovative range of vanilla flavors.

#### **COATIS**

Coatis is the leading Latin American producer of Phenol and Solvents. It manufactures and sells phenol and derivatives, as well as oxygenated solvents which play an important role in industries such as automotive, construction, adhesives, inks and industrial coatings. Headquartered in Brazil, Coatis has 646 registered employees, and its main production is based at the Paulinia site (São Paulo). Aligned with the Group's strategy, Coatis has an advantageous position regarding sustainable development trends, its presence in emerging countries, a competitive portfolio for the markets it serves and access to bio-based raw materials (ethanol and glycerol). Coatis launched in 2010 the Augeo Family of sustainable solvents, based on glycerol.

## Advanced Materials

Advanced Materials focuses on ultra-high performance applications addressing the needs of industries such as advanced transportation, healthcare, energy efficient tires, automotive emission control, smart devices or hybrid vehicles batteries.

### **SPECIALTY POLYMERS**

Solvay Specialty Polymers manufactures more products with more performance than any other polymer company in the world. With 2,700+ people around the globe, the company serves customers from its 15 manufacturing and 11 RD&T centers. Headquartered in Bollate, Italy, the GBU supplies over 1,500 products across 35 brands of high-performance polymers – fluoropolymers, fluoroelastomers, fluorinated fluids, semi-aromatic polyamides, sulfone polymers, aromatic ultra polymers, high-barrier polymers and cross-linkable high-performance compounds – for use in high growth markets such as Advanced Transportation, Healthcare, Water, Energy, and Smart Devices.

### **SILICA**

Silica, the inventor of Highly Dispersible Silica in the 90s and today a world leader with a market share of above 60%, provides innovative solutions to the challenges of sustainable mobility. With eight manufacturing sites and four R&D laboratories on four continents, Silica offers to all the world's tire manufacturers, a wide range of silicas used mainly in the low energy consumption tire market. The multiple properties of silica also allow the GBU to develop innovative solutions for toothpastes, animal nutrition, high performance membranes and reinforced rubber.

### **RARE EARTH SYSTEMS**

With a 20% market share, Rare Earth Systems is the world leader in rare-earth formulations required for automobile catalysis, luminescence and high-precision polishing. Used in small quantities, rare earths are essential "vitamins" for developing new technologies in general and green technologies in particular. With a view to diversifying its sources of supply and economizing this resource, the GBU has patented a process for recycling rare earths contained in energy-saving light bulbs, batteries and magnets.

### **SPECIAL CHEMICALS**

Special Chemicals is active in a range of markets: Energy Conservation and Storage, Semicon/Electronics, Agro & Food and Performance Materials. It is a world leader in Fluorine Chemistry and maintains this position through innovation, using its distinct knowledge for high-end applications such as heat exchangers and Li-ion batteries. Special Chemicals also develops its Electronics platform as a niche player with strong partners. The JV launched with Air Liquide for F2 onsite production is one example. The GBU has a global presence: more than 35 sites, HQ in Seoul and 2,300 employees spread across four continents.

## Performance Chemicals

Performance Chemicals operates in specific, highly resilient and mature markets whose key success factors are principally, economies of scale, competitiveness, and quality of service.

### ESSENTIAL CHEMICALS

The Essential Chemicals BU comprises two global activities Soda Ash & Bicarbonate and Peroxides.

**Soda Ash & Bicarbonate** - Solvay is the world leader in Soda Ash and Bicarbonate. The Group holds leadership positions in Europe and the US, and has a commercial presence in every region of the world. Solvay employs two production technologies: the exploitation of one of the world's largest natural soda ash mines (Trona) in the world, based in America, and synthetic processes implemented across Europe. The soda ash business aims to increase profitability by leveraging its strong presence in North America and by effectively addressing the challenges of the European market. The objective for the growth-oriented bicarbonate activities is to leverage a remarkable, European, application-based know-how to successfully develop the market in other regions.

**Peroxides** - Solvay is the leading global producer of peroxides used in a wide range of applications in the pulp & paper, chemicals, environmental, mining, textiles, disinfection and detergent markets. The Group is recognized for its capacity to develop innovative technological solutions, from the creation of large manufacturing units to small dedicated modules for on-site use. Our objective is to lead technological and process innovation and develop new applications with our customers to capture a significant share of the overall market growth.

### ACETOW

Acetow, the world's third largest producer of cellulose acetate tow for cigarette filters, is also a leading supplier of cellulose acetate flakes for the textile industry. Acetow has five production sites on four continents. It has enhanced its competitiveness by developing new production capacity at its site in Freiburg (Germany) and introducing several product innovations that match market needs for faster degradability, new filtration systems and a choice of colors. In order to meet the Group's growth strategy, Acetow constantly improves its processes.

### ECO SERVICES

Eco Services, number one in sulfuric acid regeneration in the United States with about 500 employees across eight industrial units, produces and regenerates sulfuric acid for refineries, chemical manufacturing and other industrial applications. The BU's success is based on its exceptional reliability and service, operational efficiency and expertise in managing its production logistics. Ongoing upgrades at the sites will reduce sulfur dioxide emissions by 90% by 2014.

### EMERGING BIOCHEMICALS

Emerging Biochemicals is based on Vinythai companies that comprises the Group's Chlorovinyl and Epicerol businesses in Asia. Vinythai is currently a Company traded on the Stock exchange of Thailand and controlled at 59% by Solvay and at 25% by the Thai corporation PTTGC. Vinythai has been founded in 1988. PVC production started in 1992, and in 1996 Vinythai launched Chlor-Alkali production with a capacity of 100kta of sodium hydroxide and VCM production with a capacity of 140kta. Over the years, Vinythai has progressively increased its VCM capacity to 400 kta and its PVC capacity to 280 kta. In 2012, at its Map Ta Phut production site, the Emerging Biochemicals GBU successfully started the first biobased Epicerol® production on its brand new 100Ktpa unit, built and operated according to the process patented by Solvay. The GBU is currently building a second Epicerol® unit in Taixing (China), that will come on stream at the end of 2014.

## Functional Polymers

Functional Polymers operates in specific, highly resilient and mature markets whose key success factors are principally, economies of scale, competitiveness, and quality of service.

### **POLYAMIDE & INTERMEDIATES (POLYAMIDE)**

Polyamide & Intermediates, one of the world's leading players in Adipic Acid-based intermediates and in Polyamide 6.6, responds to challenges and opportunities in the automotive, consumer goods, industrial equipment, construction and electrical & electronic component markets. The GBU is one of the few market operators to control the entire Polyamide chain, from the initial upstream stages (production of Adipic Acid and HMD-based intermediates) to downstream operations (Polymers). Working closely with its customers, P&I boasts a global presence – with seven industrial sites and three R&D centers – to provide manufacturers with increasingly innovative solutions.

### **ENGINEERING PLASTICS (POLYAMIDE)**

Engineering Plastics, the global specialist in polyamide-based engineering plastics, has for the past 60 years developed, manufactured and marketed, under the brand Technyl®, a complete range of high performance plastics for the automotive, electrical, construction and consumer goods markets. With a growth strategy bolstered by six production sites worldwide, Engineering Plastics employs its expertise and innovation capabilities in order to more closely serve the needs of its customers, through a global network of technical and R&D centers.

### **FIBRAS (POLYAMIDE)**

Fibras is number one in polyamide yarns in Latin America. With 1,280 employees, the GBU develops, manufactures and commercializes textile and industrial yarns and staple fibers, based on polyamide 6.6, for final use in clothing and industrial applications. Focused on innovation, Fibras launched Emana™, a smart yarn approved by the Health Authorities, which has been used for cosmetic-textile products and high performance sportswear. Following Solvay's strategy, Fibras has contributed to cash generation through operational excellence, innovation and worldwide partnerships.

### **SOLVIN (CHLORO-VINYLS CHAIN)**

SolVin (75/25 Solvay/BASF) is a leader on the European vinyls market, covering the entire chain, from chlorine and caustic to SolVin® PVC polymers - and even recycled PVC called VinyLoop®. Its 1,400 employees and the even distribution of its seven production sites enable it to optimize the sales of products mainly to the Building & Construction market.

### **INDUPA (CHLORO-VINYLS CHAIN)**

Solvay Indupa is the second largest PVC producer in the Mercosur region. SolVin™ PVC and Caustic Soda are coproduced in the Bahia Blanca, Argentina and Santo Andre, Brazil plants and are sold to a range of industries from construction and food packaging for PVC resins, to pulp and paper, food and chemical industry for caustic soda.

### **CHLOR-CHEMICALS (CHLORO-VINYLS CHAIN)**

Chlor Chemicals encompasses all of the Group's European activities in chlorine, its derivatives out of Vinyls and caustic soda. Key products are chlorine, caustic soda (both liquid and solid), chlorinated inorganics, allylic products and derivatives, chloromethanes for which it is a European leader. These products are used in a large variety of applications and industries, for example: pulp and paper, detergents, agro and food industries for caustic soda and

inorganics, epoxy resins, water treatment flocculants, fluoro elastomers for organic derivatives. Chor-Chemicals has five production sites and two R&D laboratories in Europe.

## Corporate Business and Services

Corporate Business and Services includes the Solvay Energy Services GBU as well as all the Corporate Functions, including Solvay Business Services and the Research & Innovation Center.

### **SOLVAY ENERGY SERVICES**

Solvay Energy Services (SES), created as a GBU on January 1, 2012, brings together Solvay, Rhodia and Orbeo teams specialized in energy management and CO<sub>2</sub> emissions reduction. Two hundred and fifty people located within 15 countries are responsible for the optimization of the Group's energy costs (EUR 1.2 billion in 2011) and CO<sub>2</sub> emissions. SES also develops climate care solutions for its third-party customers (for example, energy and CO<sub>2</sub> management services, renewable energies and biofuels).

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