

European legislation governing the polyester industry

Introduction

European legislation determines, to a large extent, the framework in which industry within the EU can operate. Therefore, the European polyester processing industry is required to be compliant with legislation within this framework.

Information contained in this bulletin presents a broad overview of the European directives that are most relevant to the polyester processing industry. It describes the situation as it was at the beginning of 2006 and summarizes the key points. Companies working in the polyester industry have a responsibility to ensure that they operate in full compliance with any local and national regulations as well as EU directives.

The life cycle of a FRP product.

The most important steps in the life cycle of an FRP product are shown in figures 1-4 (below). In each of these phases we will summarize the European legislation applicable to that particular stage.

Phase 1: Production of UP Resins

Unsaturated Polyester (UP) resins are produced in large modern chemical plant.

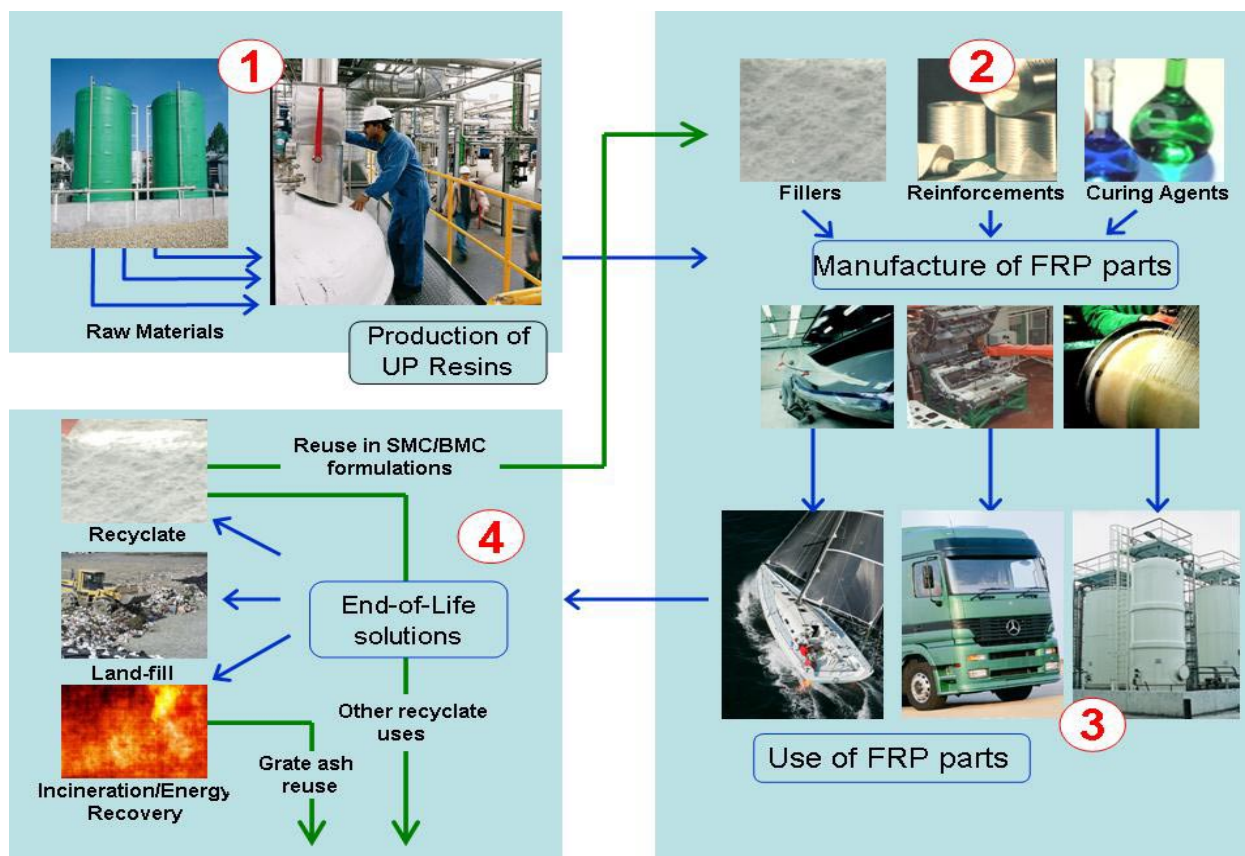
The following EU directives and Regulations apply to the UP resin industry:

- The Dangerous Substances Directive 67/548/EEC governs the classification, packaging and labelling of dangerous substances.

Most raw materials used in the production of unsaturated polyester resins are classified according to this Directive. They are supplied together with a Material Safety Data Sheet, which describes the properties and the risks for human health and the environment.

- Council Regulation 793/93/EC on the evaluation and control of the risks of existing substances.

Under this Regulation a risk assessment has to be made on a large number of high volume chemicals. Styrene, an important raw material for the UP resin industry, was on the first priority list. The risk assessment on styrene started in 1994; since then an extensive risk assessment study has been undertaken. It is now in the final stage of completion. Depending on



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the outcome of the study the classification and labelling of styrene may change. It is expected that, during the course of 2007, a final Classification and Labelling proposal will be adopted.

Phase 2: Manufacturing of FRP

During the manufacture of FRP parts, the main areas where European legislation is in force concern occupational health and emissions into the environment. In most European countries, strict limits are set over occupational exposure to styrene and other dangerous chemicals. There is not yet a European standard for exposure limits. SCOEL, the Scientific Committee on Occupational Exposure Limits, is working on proposals for the standardization of these limits.

- Council Directive 98/24/EC (On the protection of the health and safety of workers from the risks related to chemical agents at work) is the principal European directive, when setting occupational exposure limits.

The European Union places a lot of emphasis on the reduction of volatile organic emissions. Several European directives govern the regulation of emissions. For the FRP industry there is one Directive, which may cause discussions with local or national authorities about the emission of styrene from FRP plant. This is the:

- Council Directive 1999/13/EC of 11 March 1999 on the limitation of emissions of volatile organic compounds, resulting from the use of organic solvents in certain activities and installations. (VOC directive).

The UP resin group of CEFIC believe that the FRP industry does not fall under the scope of this directive. They have therefore issued a position paper on this particular subject. This position paper can be found in Technical Bulletin No 13 in this series, which covers safe handling of UP resins.

Phase 3: The use of FRP products

Many FRP products are used in applications or markets where European regulations determine, to a large extent, the properties of the product. For example, many products, used in food and drinking water applications have to comply with a number of European directives.

The European Food Safety Authority (EFSA) is the keystone of European Union (EU) risk assessment regarding food and feed safety. In close collaboration with national authorities and in open consultation with its stakeholders, EFSA provides independent scientific advice and clear communication on existing and emerging risks. For the production of UP resins used in food or drinking water contact applications, only approved raw materials may be used.

Food contact materials are listed in:

- Commission Directive 2002/72/EC relating to plastic materials and articles designed to come into contact with foodstuffs.

At present, drinking water legislation is still regulated on a national member state level. But a European directive is under development similar to the food contact legislation.

Building products have to comply with:

- Council Directive 89/106/EEC of 21 December 1988 on the approximation of laws, regulations and administrative provisions of the Member States relating to construction products.

The CPD (Construction Products Directive) harmonizes the methods of test, the methods of declaration of product performance values, and the method of conformity assessment. Products sold in the building industry have to be marked with a CE marking, which implies that the products comply with European legislation on aspects like mechanical strength and stability, fire safety, hygiene, health and environment and safety of use.

Tanks and containers have to comply with:

- Pressure equipment directive 97/23/EC (PED)

All equipment designed for a positive pressure of > 0,5 bar, fall under the PED. So a lot of technical FRP products like storage tanks, pipes, etc must be manufactured following the guidelines in the PED. When compliant, these products will be marked with a CE marking. Non compliant products may not be manufactured and sold in the European Union.

Phase 4: End of Life solutions

When FRP products come to the end of their life, several European directives and regulations that impact on composite waste management, collection and recycling apply. The most critical ones are:

- Council Directive 99/31/EC on Landfill of Waste: member states have to close 'cheap doors' on landfill and should set national list of waste to be accepted or refused.
- Directive 2000/53/EC on End-of-life vehicles (ELV): reuse if suitable for reuse; recovery when cannot be reused; preference for recycling when environmentally viable.

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- Directives 2002/96/EC on Waste of Electric & Electronic Equipment, and 2002/95/EC on Hazardous Substances in WEEE: producers obliged to make internal provision for recovery, dismantling, re-use and recycling.
- EP & Council Directive 2004/35/EC on 'Environmental Liability': The causer of the environmental damage (the polluter) pays for remedying the damage that he has caused. Member states should apply before April 30, 2007.

More about the classification and handling of FRP waste can be found in Technical Bulletin no 12 in this series. It can be found under the following link:
<http://www.plasticseurope.org/Content/Default.asp?PageName=openfile&DocRef=20060328-001>

Future European legislation

In 2007 a completely new chemicals legislation regime will be introduced in the European Union under the acronym REACH (Registration, Evaluation and Authorization of Chemicals). Within REACH approximately 30,000 chemicals that are dangerous to humans or to the environment, have to be registered on a European database. In this registration procedure the manufacturers and importers of these chemicals need to carry out a chemical safety assessment. All possible adverse effects on humans or the environment have to be described. In addition, an exposure scenario has to be developed with exposure routes described for all identified uses of the chemical. Together with the exposure scenario a set of risk management measures also need to be developed.

All this information must be made available to the downstream users of the chemicals, via a material safety data sheet. It is estimated that it will take around eleven years before the whole process is completed.

REACH will have a considerable impact on all sectors of the chemical industry. It may trigger the development of safer chemicals, but it may also lead to the withdrawal of smaller volume specialized products from the market.



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