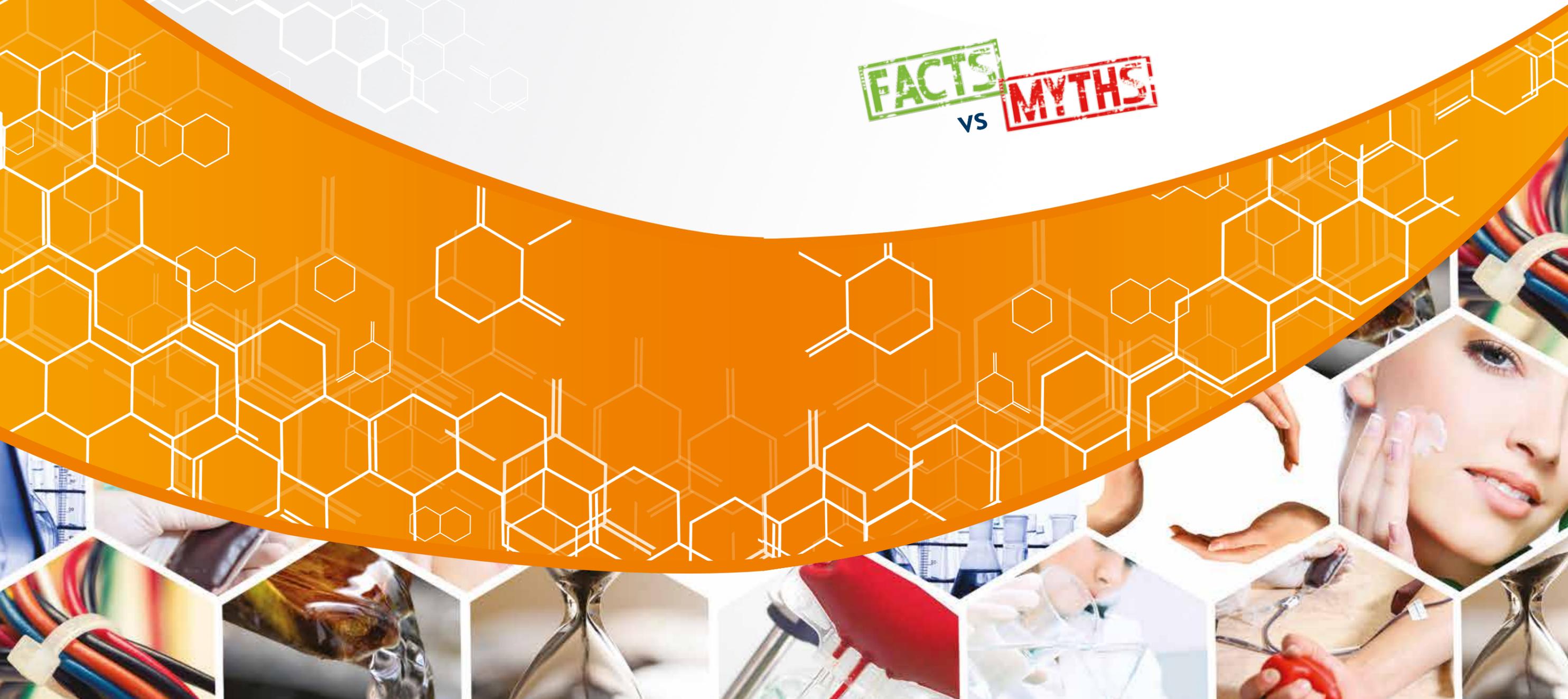




# PLASTICIZERS

**FACTS** **VS** **MYTHS**





**MYTH!**

### MYTH: All plasticizers are phthalates

The plasticizers are chemical substances which are used as additives to improve plasticity of the PVC resin. The major application for plasticisers is plasticization of poly(vinyl chloride) – PVC makes nearly 90% of the plasticizer market. Plasticized PVC is then used for the production of cables, floor coverings, wallpapers, etc.

Phthalates make the biggest group of plasticizers; they are estimated to take up about 75% of the European market of plasticizers. Apart from phthalates, other groups of chemicals can also be employed as plasticizers, like: terephthalates, epoxides, benzoates, trimellitates, citrates, aliphatic plasticizers (adipates, sebacates), etc.



**MYTH!**

### MYTH: DEHP will be banned after 2015

Based on Regulation (EC) № 1907/2006 (REACH), DEHP was placed on the list of substances for which authorization is required, i.e. permits must be obtained for specific applications. If a user holds no permit, he may not use DEHP after the so-called “sunset date”, i.e. after 21st. February 2015. Having its clients in mind, Grupa Azoty ZAK S.A. applied for authorization, and when a positive decision is taken in this regard, DEHP produced by Grupa Azoty ZAK S.A. may be used after the date as above, in compliance with the conditions as described in the petition. The authorization procedure does not cover the use of DEHP in medical devices which are governed by other regulations of law.



**FACT!**

### FACT: Phthalates do not leach from PVC to the environment (air, water, soil)

Phthalates are physically fixed with the PVC matrix which prevents their leaching out of the products made of plasticized PVC. The same is applicable to migration from free particulates (dust) of the plastic.

Phthalates may be released from the plastic when it is exposed to very high temperatures and/or solvents. Some small amounts of phthalates which may yet enter the environment will undergo biodegradation, and they will not be accumulated neither in the environment nor in living organisms.



**MYTH!**

### MYTH: Phthalates can be found anywhere, including food additives and cosmetics

**Food additives:** The EU legislation prohibits any use of phthalates as food additives. However, phthalates may be used in the plastics which are permitted for food contact applications, provided that they must satisfy the migration conditions as laid down by the European law. Their use is of secondary importance in practice and it is limited to such applications as various types of plastic films which are employed in packaging fat-free food-stuffs.

**Plastic bottles:** As regards the suspected presence of phthalates in water and other bottled drinks, the answer is very simple: phthalates will not be released to those liquids for the simple reason that they are not used for the production of bottles. The drink bottles are produced with the use of such plastics as PET poly(ethylene terephthalate) or polyester. Despite similar names, PET and phthalates are different substances.

**Cosmetics:** Higher-molecular weight phthalates are not used for the production of cosmetics since they do not offer the properties which are required for those applications. Lower-molecular weight phthalates (i.e. DBP and DIBP) were used in cosmetics in the past but their use is prohibited in EU now: the EC legislation banned the substances which were classified as carcinogenic, mutagenic and/or toxic for reproduction. DMP and DEP make the only phthalates which have been permitted at present in that business.



### FACT: Plasticized PVC may be recycled

PVC is a plastic which meets the criteria for sustainable development. Its production is less oil dependent than the production of other plastics. It is very stable and little care is required to preserve its performance, it is cheap and it may be recycled many times with no loss of its initial physical-chemical properties.

Owing to the Vinyl Plus Voluntary Commitment (formerly Vinyl 2010), more than 1 million tons of PVC products were subjected to recycling in Europe since 2000. The re-processed materials reached 257,084 tons in 2011 only. Plasticized PVC makes about 45% of that volume and it comes from cables, flooring materials and PVC-coated fabrics.



**MYTH!**

### MYTH: Chemical industry holds back the data and makes use of obsolete scientific methods

The Regulation (EC) № 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) places the producers and importers of chemicals under the obligation to register the substances which they intend to place on the market and to pass the information on those substances along the supply chain. The Material Safety Data Sheet for a hazardous substance/mixture makes an efficient tool for communication in the supply chain on the risk presented by a given substance/mixture. Additionally, the European Chemicals Agency (ECHA) in Helsinki makes all the registration dossier for substances available on its website, free of charge. The interested parties can find all the information on physical-chemical data as well as on toxicological and eco-toxicological performance of the registered products there, with reference to the data sources.

The phthalate industry supports the research programmes which investigate the human health impacts and environmental impacts of their products. A few billion Euros have been invested over the last 25 years to develop phthalates which now supply a majority of the European market for plasticizers.



**FACT!**

### FACT: Blood-preserving effect of DEHP

Bis(2-ethylhexyl) phthalate, the leading plasticizer employed in medical devices, offers the unusual and exceptional property: it namely helps in extending the “lifetime” and serviceability of human blood through its interaction and stabilization of erythrocyte cell membranes. The pool of blood which is available in blood banks would be reduced considerably if we could not use such medical items.

Blood bags contribute to a quick and efficient medical aid to casualties. The bags are lightweight but they can hardly be torn open, they are easy to handle and use, and they take up less storage space than traditional containers/bottles. As they are chemically neutral (the plasticized PVC is chemically inert), bags can be safely used in other instances and can be just used directly with the patients’ bodies, like urinal bags and/or stoma bags. They provide some comfort to people who have to use them, they do not emit sounds and prevent offensive odours.



**MYTH!**

### MYTH: Medical devices made of PVC may cause serious health effects

From a practical point of view, PVC bags are better than glass containers/bottles. They are not only easier to use and store but they also provide better safety to their users. They would not get broken and would not cause cuts and/or wounds which is essential in emergency situations and during rescue operations outside hospitals, e.g. after a car crash.

PVC blood bags offer an important advantage in case of blood transfusion: they can be pressed by hand to convert a drip process into a forced one. PVC bags can also be placed in centrifuges for separation of blood components.