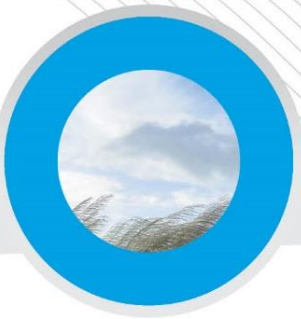
CMI ENVIRONMENT

AIR & GAS
CMI Europe Environnement



Plastics

The preferred materials for harmful, corrosive and odorous environments

The term *plastic material* or *polymer* covers two major families of materials with totally different properties and formatting methods:

thermoset plastics and **thermoplastics**.

Property of thermoplastics

- **Formable** without any chemical reaction **under the effect of heat** ("thermo"), they keep the desired shape when cooled. This malleability makes them **easy to work with** especially when it comes to making **fully tailor-made equipment** such as those that we manufacture;
- Their **transformation rate** is almost exclusively related to their cooling rate, so much **faster** than other plastics;
- They have a remarkable **resistance to chemical attack and corrosion**, whether liquid or gaseous effluents;
- To meet the requirements of industry, they also have **good resistance to mechanical stress**;
- These can be used over **wide temperature ranges:** up to 80°C for utility plastics, and up to 150°C for speciality thermoplastics**;**
- Thermoplastic **polymer** is selected according to its **resistance to wear, UV and weathering**;
- Products made of thermoplastic materials are **lighter** than their metal counterparts;
- They are **ecological** because they are **100% recyclable;**
- Some have **specific properties** like **dielectric, non-flammability or electro-conductivity** qualities.

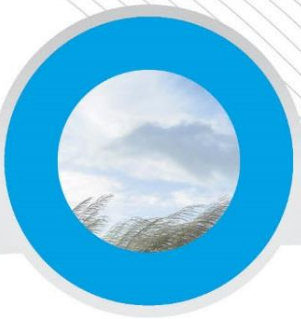
PROCESSES USED BY
CMI EUROPE ENVIRONMENT
FOR WORKING THEM:

- **Plastic welding**
- **Extrusion**
- **Digital machining**

OUR STANDARD RANGE:

HDPE High Density PolyEthylene	**PVC** PolyVinyl Chloride
PPh PolyPropylene Homopolymer	**PPS** PolyPropylene Sulphide
PPS-el PolyPropylene Sulphide Electroconductor	**PVDF** PolyVinyliDene Fluoride

CMI Europe Environnement
1, rue des Pins - Parc d'Activités du Pays de Thann - 68700 Aspach-Michelbach, France
Tél : +33 (0)3 89 37 41 41 | Fax : +33 (0)3 89 37 47 30 | europe.environnement@cmigroupe.com



Advantages of thermoplastics over metals

Chemical resistance

- Unsuitable for corrosive environments, most metals, even stainless steels often need to be protected by adding a surface protective layer (paint, liner, etc.) => After abrasion/wear of the layer, the metal is not protected and deteriorates rapidly.

Noise reduction

- Thermoplastic construction thicknesses are greater than those of metal, thus promoting a much better sound insulation for equipment (fans, ventilation ducts, etc.) and therefore help comply with work safety standards for operators.

Advantages of thermoplastics over thermoset plastics

Commonly referred to as "resins", thermoset plastics, such as FRP or SVR, can only be worked once by applying successive layers of materials on a "template" or "mould", which is often thermoplastic.

Under the action of heat and a catalyst reagent (polymerisation accelerator), the resin becomes irreversibly rigid to become untransformable after polymerisation.

Resins are brittle, insoluble, infusible and non-recyclable.

Their manufacturing process exposes operators to many chemical risks linked on the one hand to the raw materials used when cold or transformed when hot (with emissions of specific pollutants or dust), and on the other hand those from combustion or from reactive products (solvents, cleaners, etc.).

Intervention on resin devices exposes all operators to harmful dust.

- **Material made as a solid**
- **Cost and speed of implementation**
- **Malleability & Adaptability to site configuration, linked to possible changes/interventions on-site**
- **Resistance to mechanical twists**
- **Chemical compatibility with fluorine compounds (HF)**
- **Minimal exposure of operators to chemical hazards**
- **Recycling**

CMI Europe Environnement
1, rue des Pins - Parc d'Activités du Pays de Thann - 68700 Aspach-Michelbach, France
Tél : +33 (0)3 89 37 41 41 | Fax : +33 (0)3 89 37 47 30 | europe.environnement@cmigroupe.com