SMART EXTRUSION
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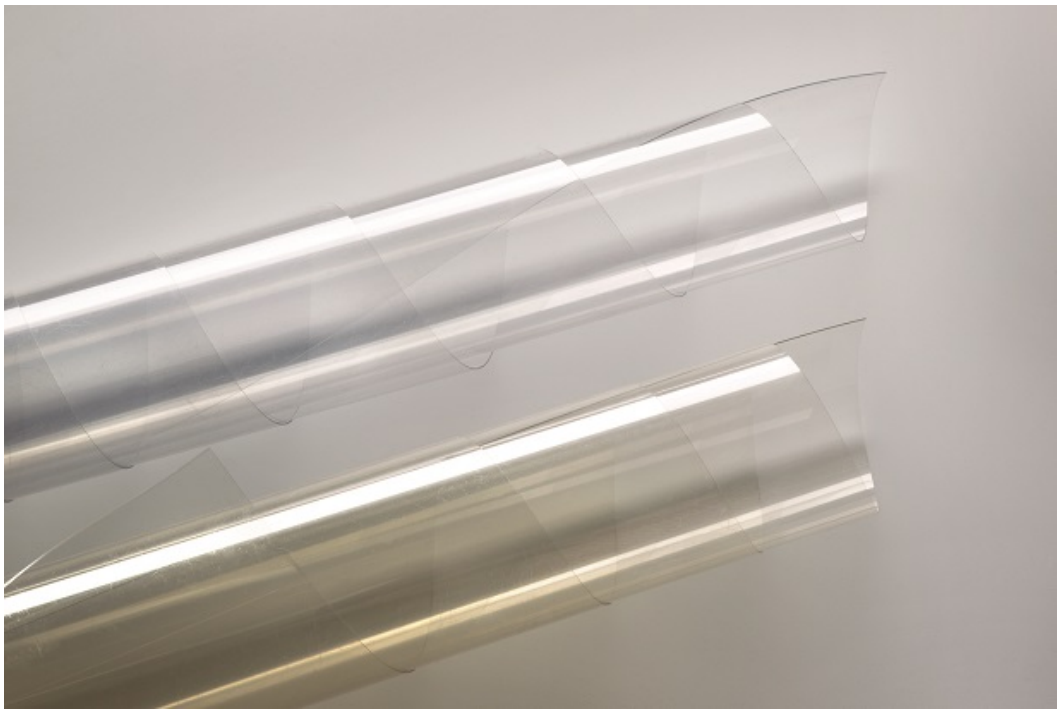
Recycling growth trend to define additives market tendencies

Source: smart_extrusion
ARTICLES

According to various forecasts the global plastic additives market is expected to reach $50-$57 billion by 2020. We discussed challenges and prospects of additives market with the head of Marketing Mrs. **Lucia Buffoni at REPI**, a global producer of liquid colorants and additives.

What are the most significant trends in additive technologies now?

The trend of using recycled plastic materials is continuously growing and therefore we are more and more asked to develop and supply additives, which can help **especially recycled PET** to regain similar



REPI Anti-Yellow additive for R-PET

aesthetics and mechanical properties of virgin material.

The more PET is recycled, in fact, the more converters face quality issues in terms of inconstancies of supply and big differences from batch to batch.

REPI Anti Yellow range offers different grades, which are able to correct **L**, **a** and **b** values. The one acting on "L" avoids R-PET to loose brightness; the one acting on "a" corrects the greenish shade; the additive acting on "b" corrects the yellow shade.

REPI IVE additive is a valid aid to enhance IV of R-PET in order to reach the same Intrinsic Viscosity as a standard virgin PET.

Talking about performance additives, REPI successfully supplies the **Process Aid/Slip Additive** both for extrusion of PET films and for injection moulding of preforms or bottles. This additive prevents final products to stick to one another (which would cause scratches), improving the dynamic and static coefficient of friction values (COF). This results in higher quality of films and preforms and therefore less scraps.

Among the latest developments of REPI there is **Xpansor**, a foaming agent for PVC, largely required by the building and construction industry as well as by the advertising sector. The additive acts on the cell structure of the foamed sheet, making it lighter and with a perfectly smooth surface.

Which markets will increase the demand for colorants and additives?

Worldwide the demand for additives strongly related to recycling needs is growing. The demand for shiny and bright shades as well as seasonal shades for limited edition projects (especially in the packaging industry) is also increasing globally.

The technology of liquid colours is the right choice in this context: it gives the possibility to run short production batches of special shades since the colour change is very quick, the colour consumption is limited (and therefore only a small stock is needed) and scraps between production runs are few. The liquid technology gives flexibility and economic efficiency.

What are the greatest challenges going forward?

As already mentioned, the topic of sustainability is hot everywhere. The industrialisation process is eroding traditionally rural areas to develop cities and spreading the consumer economy. As a result, the use of plastics grows and so do the themes of sustainability and shortage of raw materials.

There are some regions with recycling as a common habit already (Western and Eastern Europe) and in other regions it is still a challenge. The possibility to give a second life to plastics is a key topic.

At the same time, if we go downstream and look at our customers' processes what we see is the implementation of ever-faster production processes and therefore higher outputs. There is no chance for mistakes, which would produce tonnes of scraps. Converters and plastics processors in general, look for reliable partners for each production stage, able to help them prevent fails to happen.

In this context, REPI has developed an innovative online control system for the extrusion industry called **Colour Management System**. Thanks to dedicated software, the REPI colour/additive dosing unit communicates with a spectrophotometer and adjusts colour or additive dosage online, during the film or sheet production.

This gives dramatic advantages to the user: the time required to fix the standard before the industrial production can start is noticeably reduced, since there is no need to cut a piece of sheet to be analysed in the lab in order to define if the standard has been reached. The colour reading is performed directly during production immediately after the outlet of the plastic film from the extruder giving a signal once the reference has been reached.

After the industrial production has started, the CMS is able to detect even the smallest shade deviation and to adjust automatically the dosage of colour or additive (e.g. Anti Yellow in case of R-PET) to respect the reference. In this way a 100% colour proofing is ensured and waste is reduced greatly.

A colour change can be carried out by pushing the button. For making so, only the corresponding colour needs to be selected on the dosing unit and the on-line CMS regulates the dosage accordingly. The system is suitable for different materials like PET, PMMA or PC and is installed by REPI's technicians who can remotely assist the user in case of need.

Even the smallest shade deviations are detected

What is the main focus of REPI company at the moment and in the nearest future?

REPI's priority is to grow its thermoplastics business, especially in big international groups where we are already well-known and in such perspective geographical regions as Asia-Pacific and Latin America.

We are also eager to increase the choice of REPI liquid colours and additives in extrusion processes, as a substitution of both solid masterbatches and liquids.

One more goal is converting some applications traditionally coloured with solids to liquids: PET – Polycarbonate – PMMA- PP- ABS sheet, profiles, parts.

REPI is a global supplier. And are there any regions of major priority for you?

The U.S. is a priority since we have our second production site there. The U.K. has started a small production for selected product lines as well.

Russia is recovering very fast after difficult years. We believe this market has a great potential for us. India and Far East are the rapidly developing regions and we intend to grow accordingly.

Lucia Buffoni - Marketing Manager REPI S.p.A.

September 2017