

Liquid Colours and Additives for Thermoplastics

REPI



In plastics and polyurethanes, colour is the most effective way of differentiating one's product - whether it is the dashboard of a car, the skirting board inside a home or office, or a bottle on the shop shelf.

Besides colours, many applications in plastics today also require additives: to maintain the colour longer in the sun, to protect the product inside the packaging, or to allow better use of recycled plastic materials.

Liquid colour technology has long been promoted by REPI as a technically accurate and economically appealing technology. More and more, it is meeting with a successful response from an increasing number of industries.

Today, REPI exports 75% of its products into 55 countries from its main production site and R&D centre near Milan in northern Italy, and from its sites in the U.S.A. and Russia. It offers custom-made solutions in colourants and additives – together with the tools to use the products: own dosing units, ancillary and measuring equipment for specific applications – and always a strong technical support, both in the lab and on the field.



Liquid Colour Technology - why?

- liquid easily covers the resin chips, giving a more uniform coloration to the final product
- liquid can be concentrated to give the needed shade at a low addition rate, making for a low colouring cost
- colour and additive can be formulated together to give a "all-in-one" solution
- colour change with liquid colour is quicker than with other types of colourants, be it in injection moulding or in extrusion
- in some applications, liquid basic colours can be mixed according to the supplied formulation, in order to produce any given shade in the necessary amount
- liquid colour gives an economic advantage, not only due to the lower cost of coloration, but also thanks to reduced storage and logistic expenses

REPI Liquid Colour and Additive Solutions

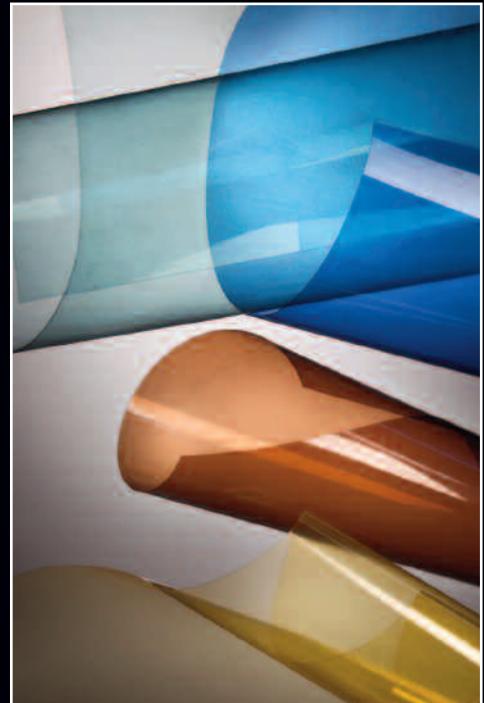
- can replace not only masterbatch or microgranules, but also powder pigments
- are used in most production processes, including injection moulding, ISBM, EBM, extrusion, calendering, casting
- match any colour effect required: transparent, opaque, pearlescent, fluorescent, metallic
- can be developed to meet any requirement, including food contact and pharmaceutical legislations
- are dosed by means of dosing units developed internally and continually optimised
- in some cases, the same colour can be used for different materials
- different additives are available depending on the final application



Extruded twin-wall and compact polycarbonate sheets

Liquid colours give uniform coloration at low LDR, and quick colour change in the screw. Special colours include silver, gold, pearl and metallic effects.

Colours are also available for PMMA, ABS, and co-extruded sheets.



Extruded sheets for thermoforming

PET, PS, PP, rigid PVC are uniformly coloured by liquid colour, with fast colour change.

In the case of rigid PVC, batch pre-coloration can be avoided.

PET sheet coloured by liquids loses some of its sticky characteristics, which can be further reduced with an Anti-stick Additive.

For the co-extruded layer, the colour selection includes special effects.



PVC profiles for interiors and for furniture

Often match shades of wood.... this may mean over 100 different shades. Liquid basic colours are the ideal solution: with 8-10 colours, it is possible to produce, on the spot, the necessary amount of any specific shade. Colour change in the extruder occurs faster than with more traditional forms of coloration.

Liquid colours allow for surface decoration with any type of ink. Special colours are available for WPC.



Injection moulded PET preforms

Acquire uniformity of coloration and enhanced shine when coloured with liquid colours. Dosing below the hopper makes colour change quick and easy, saving on time and scrap. Additives can be offered separately, or in an all-in-one solution with any specific colour. They include UV Absorber, AA Reducer, Anti Yellow, Blowing Additive and Process Aid.



Barrier solutions

Today, the search is for "barrier" performance in order to protect the contents of the PET packaging – from visible light and UV rays, and from O₂ ingress and CO₂ egress. REPI offers specific colours and additives which have such characteristics, or enhance such characteristics in the resin they are colouring.



Recycled PET

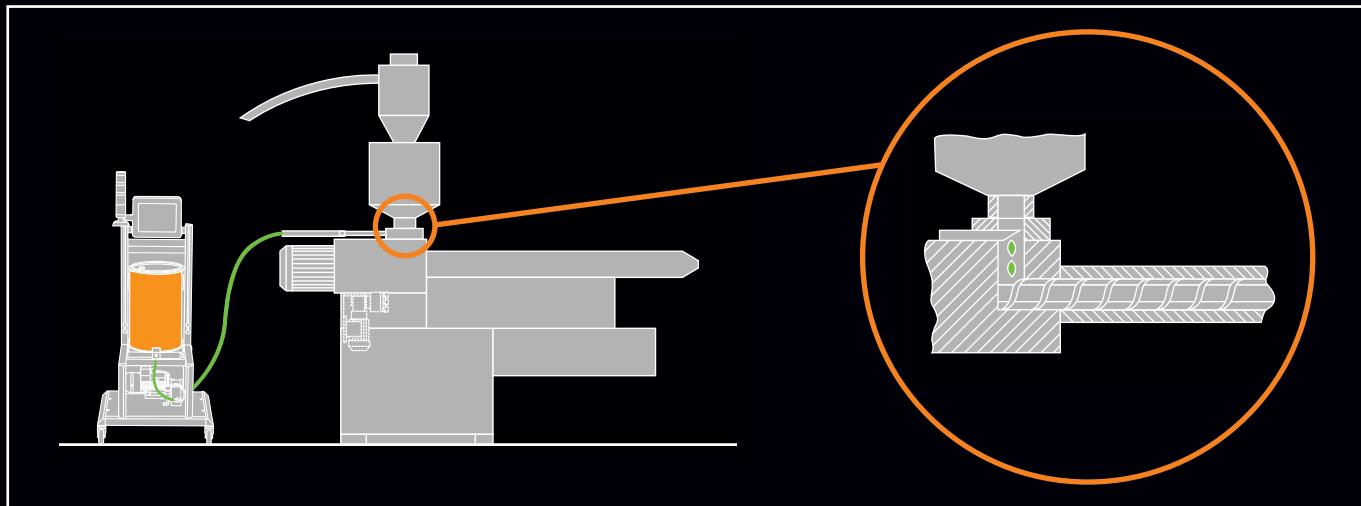
Old bottles are turned into new bottles, or into the middle layer of PET sheet for thermoforming.

Either way, the r-PET acquires an undesirable yellowish shade. The Anti Yellow series is designed to bring the r-PET back to the Lab values of virgin PET.

Different solutions are offered based on the quality and shade of the starting PET flake or chip.



Processing with REPI Liquid Colours



REPI Dosing System

The latest in the series of REPI dosing units for liquid colour dosing in the thermoplastics process is the U2011, which follows the U2005.

The U2011 is suitable for both injection moulding and extrusion machines. It is normally fitted with gear pumps of different sizes, allowing for precise and constant dosing. The pumps are quickly installed and removed, and easily cleaned. In few special cases, a screw pump is also offered. Once calibration has been made for any specific colour or additive, the data is stored in the control unit memory, and can be recalled simply by pressing a button.



The U2011 features:

- ✓ user-friendly touch-screen
- ✓ encoder-guided dosage, allowing high precision starting at 1 rpm, as well as fractional dosage above 1 rpm
- ✓ memory for a limitless number of programs
- ✓ a special program allowing to chose the right pump for each application and colour
- ✓ new colours can be programmed while the unit is in operation
- ✓ programs can be taken in or out of the memory by means of a USB port, while the unit is running
- ✓ easily accessible LOG memory allows to check and transfer past operational history
- ✓ USB, SD port and LAN options
- ✓ a special program enables easy handling of the optional pressure gauge.

For smaller machines, the dosing unit A028 is proposed. This is a more simple, less automatic version, for injection moulding and for extrusion, which also works with the same range of pumps as the U2011.

REPI offers full assistance for all its units, starting from the assembly and quality control of the unit, to the installation and training at the customer's premises, with a trouble-shooting service team available worldwide.



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