

Colacryl[®] and Elvacite[®] Acrylic Resins for Porous Moulds





Brands with a strong heritage and a proven track record

With a history of supplying high quality, cost-effective acrylic polymers to the ceramic industry for over forty years, Mitsubishi Chemical UK continues to support whiteware producers and mould makers around the world to develop efficient, reliable high-pressure casting systems.

Our brands Colacryl® and Elvacite® stand for quality, reliability, and service. Several key factors contribute to our continuing success:

- High quality products: we offer a bespoke range of acrylic products for mould production, which has been developed by working with major producers over many years.
- Dependable product characteristics: we concentrate on tightly controlling all the important characteristics of our resins such as particle size, reactivity and molecular weight.
- Reliable supply from an integrated production process: our acrylic polymers are supplied throughout the world, and our vertically-integrated manufacturing chain assures security of supply.
- Flexible approach: our experienced in-house technical team has built strong, direct relationships with the industry. This has enabled us to develop a portfolio of products that provide reliable, value-adding solutions that can be further tailored to the specific needs of our customers.

We offer a range of acrylic polymers that are recognised world wide for their ability to perform effectively and efficiently. Our range covers all commercially important types and has been created using our extensive experience to provide the best choice and quality to our customers.

We are also happy to work in partnership with our customers to develop bespoke products to match specific requirements.

Our acrylic-based polymers allow producers to make higher quality moulds that have significantly longer life than traditional plaster moulds; they also enable more economic production in facilities that require a smaller footprint and reduced headcount. These factors are of particular interest for manufacturers when drawing comparisons with traditional techniques.

For example, each plaster mould might only be used once per day and needs to be dried fully before re-use. This either requires lengthy time to dry naturally, or a large amount of energy for force drying (each plaster mould can use 2.3MJ of drying energy during its lifetime of 100 cycles).

Why choose acrylic?

Acrylic (commonly known as PMMA) is a proven, cost effective way of producing pressure casting moulds. A PMMA mould has significant benefits over traditional plaster moulds:

- Cycle times are reduced
- Low mould surface deterioration
- A mould life expectancy of 20-50,000 impressions
- Huge energy saving
(10x less energy than bench casting)
- Less space requirements
- Lower labour costs

To achieve high efficiency and long life, moulds must be strong and have controlled porosity. High mould strength is achieved by the balance of particle size and molecular weight of the acrylic polymers. The regular distribution of the pores in the matrix ensures good permeability and controllable flow rates.

We can provide advice on variations of compressive strength, fatigue strength and permeability of moulds, which helps users to design moulds with the optimum properties for their own designs and their associated slip rheology and composition. This help in basic design often translates to reduced unit manufacturing cost and moulds with a longer life.

Product	Molecular Weight (million)	Particle Size	Application
Colacryl® DP300	1.30	80-100µ	Base polymer
Colacryl® D150	0.70	40-52µ	Reinforcing polymer
Colacryl® TS2073	0.20	40-45µ	Extra fast mixing polymer
Colacryl® TS2082	0.40	90-110µ	Filler polymer
Elvacite® 3009	0.14	400-600µ	Filler polymer



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