

ISOCRYL® EP-450, and EP-555 *Experimental Product*
GLYCIDYL ACRYLIC RESINS
FOR CLEAR POWDER COATINGS



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GENERAL DESCRIPTION

Isocryl® EP-450, EP-555 are glycidyl functional acrylic resins designed for clear powder coating applications that demand superior clarity, smoothness, UV durability, intercoat adhesion and compatibility with other powder coating binder systems. Each resin in this series was designed to accentuate certain performance criteria.

Isocryl® EP-450, with a Tg of 68°C, has the added feature of high resistance to sintering at storage temperatures of up to 40°C. Isocryl® EP-450 is recommended for locations where climate controlled storage is not accessible.

Isocryl® EP-555, with a Tg of 53°C, has the smoothest appearance of these two resins, notably at low bake temperatures. It is recommended where distinctness of image is the critical aesthetic criterion.

Note: *Resiflow® P-64F* flow control is recommended to achieve optimum clarity and smoothness.

TYPICAL PROPERTIES*

Appearance	Clear Granules
Specific Gravity (25/25)	1.1 – 1.2
Softening Point, RING & BALL	105 – 130°C
Epoxy Equivalent Weight	390 - 430
Non-Volatile, weight %	98.5% minimum
Gardner Color 50% IN BUTYL ACETATE	1 Maximum

* Not to be used for specification purposes

REPRESENTATIVE FORMULATIONS

Each of the Isocryl® resins EP-450, and EP-555 are formulated with Dodecanedioic Acid (DDDA) at a binder ratio of 78/22 Other aliphatic dicarboxylic acids may be used, but the binder ratio should be recalculated for balanced stoichiometry. The formulation below is based on laboratory experimental data. Commercially scaled-up formulations require optimization of raw material concentrations and processing conditions to meet the individual customer's requirements.

	Formula
Isocryl® EP-450, EP-555	78
DDDA	22
Benzoin	0.5
Irganox 1076	0.2
Tinuvin 144	0.5
Tinuvin 900	0.5
Resiflow® P-64F	1.8

FORMULATION CONDITIONS

All raw materials require a high intensity pre-mix prior to extrusion.

EXTRUSION CONDITIONS

Zone 1 - 90°C

Zone 2 - 90°C

Screw - 250 rpm, double extrusion

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CURE CONDITIONS*

10 minutes at 200°C peak metal temperature.
15 minutes at 180°C peak metal temperature.
20 minutes at 160°C peak metal temperature.

**For optimum smoothness, spray a film build of 50-75 microns and cure at higher temperatures if the substrate allows.*

REGULATORY LISTINGS

The components in these materials are either listed or exempt from listing due to polymer exemption criteria for the following chemical listing inventories: AICS (Australia), EINECS (Europe), ENCS (Japan), IECSC (China), NDSL (Canada), PICCS (Philippines), TSCA (USA)

PACKAGING (NET WEIGHT)

55 lb. / 25 kg in fiberboard box with polyolefin liner

PRODUCT AVAILABILITY

These products are still experimental and require lead time.

STORAGE AND HANDLING

Keep container tightly closed and store in a dry, well ventilated area away from heat and sources of ignition. Store at less than 100°F (38°C). Shelf life of unopened containers is one year from date of shipment. See SDS for additional information.

CONTACT INFORMATION

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TDS Revised by: S. Daymon

TDS Approved by: F. Allen