

# ITW Insulcast Key Product Selector

## Key Silicone Products

### Condensation Cure (tin)

Product	Primary Benefits	Key Properties	Competition
RTVS 11	General purpose, low cost	12,000cps, 45A	DC 3110, GE 11
RTVS 16	High temperature	25,000cps, 260C	DC 3120, GE 60
RTVS 49	High thermal conductivity	50,000cps, 10BTUs	
RTVS 51	Low temperature	12,000cps, -115C	GE 511

### Addition Cure (platinum)

RTVS 27	Gen. purpose, low cost, UL94V-0	3,000cps, 60A, 1:1 mix	Dow 170, GE 627
RTVS 8127LV	Low cost, low visc., medium T.C.	4,000cps, 5 BTUs, 1:1 mix	
RTVS 27HTC	Low viscosity, med-high T.C.	6,000cps, 7 BTUs, 1:1 mix	
RTVS 3-95-1	High thermal conductivity/temp.	15,000cps, 10 BTUs, 260C	

## Key Epoxy Products

116FR	Gen. purpose, low cost, UL94V-0	8,000cps, 75D, 1:1 mix	Loctite/Hysol 4412
116FRFCFS	Gen. purpose, low cost, faster cure	9,000cps, 80D, 1:1 mix	
140	High thermal conductivity, low CTE	120,000cps, 90D, 10 BTUs	E&C 2850FT
333	Low visc., low cost, UL94V-0, T.C.	3,000cps, 85D, 4.5 BTUs	Loctite/Hysol 1068
501	Low viscosity, unfilled	3,000cps mixed, 80D-85D	
504	Lowest viscosity, unfilled	250cps-700cps, 80D-85D	
985FR	Semi-flex., high temp, UL94V-0	70D, 155C, 1:1 mix	
986	Semi-flex., high temp., low visc.	65D, 155C, 6,000cps	3M 280
987CM	Semi-flex., high temp., med. visc.	65D, 155C, 60,000cps	3M 281
3230LV	Low visc., high thermal cond.	6,000cps, 9 BTUs	

## Unique Products

RTVS42Curtis11	Excellent adhesion and thermal cycle	16,000cps, 75A, UL94V-0	
I-Gel 50	Low viscosity, repairable epoxy gel	400cps, 50A, 100:25 mix	



## Silicones

- There are two primary types of two component silicones: condensation cure and addition cure (Insulcast does not manufacture single component silicones). While there are always exceptions, generally the condensation cure products require moisture to cure, are typically cured at room temperature and are not kit matched (user chooses the catalyst). They are not subject to cure inhibition and are generally less expensive. They usually are not used in deep section cure.

Addition cure silicones are kit matched products which do not require moisture to cure and are often cured at elevated temperature to speed the cure. They are often lower in viscosity and available in water clear versions; however, they are subject to cure inhibition and are generally more expensive.

- The most common reasons for specifying a silicone are high and low temperature capability (-55°C to 204°C normally / -115°C to 260°C possible), repairability and good thermal cycling performance.
- While silicones are the safest type of potting material, they are usually more expensive and exhibit considerably lower mechanical properties and chemical resistance.
- The most popular Insulcast condensation cure silicone is RTVS 11 with Catalyst 2.
- The most popular Insulcast addition cure products are RTVS 27 (and its various versions) and RTVS 3-95-1.

## Epoxies

- There are two primary types of epoxies – one and two component epoxies. One part epoxies are not as popular because they must be heat cured (3-5 hours at 100°C or 2 hours at 120°C), offer a shorter shelf life (3 months vs. 1 year) and are usually more expensive.
- The most common reasons for specifying an epoxy are:
  - anti-piracy
  - good chemical and moisture resistance
  - low cost
  - ease of use
  - primerless adhesion
  - mechanical strength
- Epoxies, while not as good as silicones, generally perform well over a wide temperature range – (-55°C to 105°C normally / -55°C to 155°C possible). To achieve 155°C performance, cure at elevated temperature is required.
- The most popular Insulcast two component epoxies are:
  - 116FR (and the faster version, 116FRFCFS)
  - 333 (with Insulcure 20 hardener)

## Polymer Technologies

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