

# VERSAMID® F-11 Polyamide Curing Agent

## Product Description

VERSAMID® F-11 curing agent is a medium viscosity, amine-functional epoxy curing agent that may be used as the sole curing agent and an accelerator for VERSAMID®, GENAMID® or other VERSAMID® products. The fast-set characteristics of this product, coupled with the wide temperature use range, have given it a great deal of utility in areas such as industrial, marine and maintenance coatings, civil engineering applications, and in fast-set adhesives either at lower or elevated temperatures. It is also useful for fast-set concrete bonding and patching compounds.

## Applications

- Industrial, marine and maintenance coatings
- Civil engineering applications
- Fast-set adhesives
- Fast-set concrete bonding and patching compounds

## Features

- Excellent low temperature cure capabilities
- Fast set films
- Low odor
- Good chemical and corrosion resistance
- Eliminates drastic color changes associated with phenol catalyzed systems
- Excellent resistance to film bloom and blush at high humidity
- Excellent accelerator for VERSAMID® and GENAMID® products

## Key Specified Properties

Property	Value
Color, Gardner	7 max
Viscosity (Brookfield) at 75 °C, cP	1,500 - 4,000
Amine value, mg KOH/g	602 - 632

### Typical Properties

Property	Value
AHEW	91
Amine value, mg KOH/g	610
Viscosity (Thermosel) at 25C, cP	2,000
Gardner color	3
Specific gravity	1.036
Flash point (Seta)	>200°F
Benzyl alcohol content	2% by weight

### Processing

Mix ratio with 190 EEW liquid epoxy is 48 phr. Due to chemical reaction, VERSAMID® F 11 and epoxy resins should not be mixed until just prior to use. VERSAMID® F 11 does not contain phenol or mercaptans as catalysts and is the fastest reacting epoxy curing agent with a gel time of 1 – 3 minutes at 77°F. Although it has short working times and films tend to be slightly brittle, these properties can be eliminated by blending VERSAMID® F 11 with VERSAMID® or GENAMID® resins or using higher molecular weight epoxies.

### Typical Chemical Resistance Properties of Unfilled Castings

Chemical	% weight gain
10% Acetic acid	Destroyed
10% Hydrochloric acid	6.01%
10% Sulfuric acid	13.71%
10% Sodium Hydroxide	0.39%
Methyl ethyl ketone	Destroyed
Xylene	0.20%
Ethanol	7.28%

*Percent weight gain after a 7-day cure at 25°C followed by a 21-day immersion at 25°C.*

### Typical Properties of VERSAMID® F 11 in a Cured Coating

Property	Value
Gel Time, minutes	3
Tack Free Time, minutes	45
Through-cure time, hours	1:30
Compressive Strength, psi	13,400
Tg, °C max	85

*Cured with 190 EEW liquid epoxy resin*

### Storage

**VERSAMID® F-11** should be stored in a dry place, in its sealed original container, at temperatures between **2°C to 40°C (35.6°F to 104°F)**. Under these storage conditions the shelf life is **24 months** from date of manufacture. The product should not be exposed to direct sunlight.

### Precautionary Statement

Huntsman Advanced Materials Americas LLC maintains up-to-date Safety Data Sheets (SDS) on all of its products. These sheets contain pertinent information that you may need to protect your employees and customers against any known health or safety hazards associated with our products. Users should review the latest MSDS to determine possible health hazards and appropriate precautions to implement prior to using this material.

#### **First Aid!**

Refer to SDS as mentioned above.

**KEEP OUT OF REACH OF CHILDREN**

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