HUNTSMAN

Enriching lives through innovation

Advanced Materials

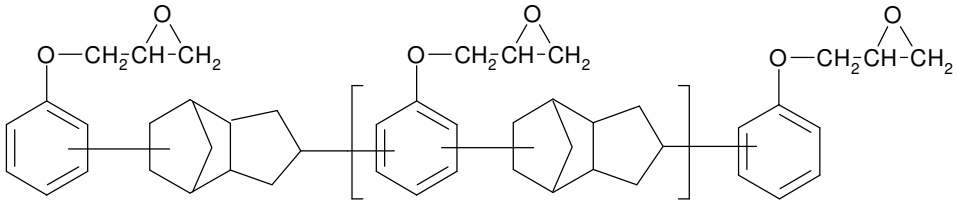
Tactix® 556* and Tactix® 756*

EPOXY RESIN

GENERAL

Tactix® 556 and Tactix® 756 are low moisture, hydrocarbon epoxy novolac resins.

CHEMICAL STRUCTURES



FEATURES AND BENEFITS

- Lower moisture absorption than many multifunctional epoxies commonly used in advanced composites
- Standard epoxy processing
- 300° F service temperature
- Suggested for adhesives and composites used at elevated temperatures in a moist environment

The dicyclopentadiene backbone low average molecular polarity – a feature critical to low moisture absorption. Its moisture absorption's considerably lower than that of typical phenolic novolacs such as Araldite® EPN 1139 and Araldite® EPN 1138 resins. Tactix® 556 resin shows an exceptional ability to retain properties under conditions of moisture and elevated temperature. Nevertheless, its outstanding properties come with no sacrifice to processability. Similar to bisphenol-A epoxy resin, Tactix® 556 resin can be used with a variety of conventional hardeners to optimize specific properties.

Tactix® 556 resin is ideal for new use where retention of properties under hot and wet conditions is critical. In some of the tables and figures below, the properties of Araldite® EPN 1139 and Araldite EPN 1138 resins have been included for comparison.

* *In addition to the brand name product denomination may show different appendices , which allows us to differentiate between our production sites:e.g , BD = Germany, US = United States, IN = India,CI = China, etc.. These appendices are in use on packaging, transport and invoicing documents. Generally the same specifications apply for all versions. Please address any additional need for clarification to the appropriate Huntsman contact.*

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TYPICAL PROPERTIES*		**Tactix® 556**	**Tactix® 756**
(ARE BASED ON HUNTSMAN'S TEST METHODS. COPIES ARE AVAILABLE UPON REQUEST)	Visual Appearance	Amber to dark colored semi-solid	
	Color, Gardner, max.	16	---
	Viscosity @ 79 °C (174 °F), cPs (mPa s)	2.250	**---**
	Softening Point, °C (°F)	53 (127)	77-87 (170-188)
	Epoxy Value, eq/kg	4.2-4.6	3.7-4.1
	Epoxy Equivalent weight, g/eq	215-235	245-265
	Hydrolyzable Chloride, ppm	<1000	<35
	Density @ 25 °C (77 °F), g/cm^3 (lb/gal.)	1.21 (10.1)	1.22 (10.2)
	Flash Point, °C (°F)	>276 (>530)	>276 (>530)

FORMULATIONS		**1**	**2**	**3**
	Tactix® 556	100	---	---
	Araldite® EPN 1139	---	100	---
	Araldite® EPN 1138	---	---	100
	Aradur® 976-1	27.6	35.5	34.9
	Cure Schedule	**3 hrs @ 177 °C/ 2 hrs @ 232 °C**	**3 hrs @ 177 °C/ 2 hrs @ 250 °C**	**3 hrs @ 177 °C/ 2 hrs @ 250 °C**
	Platen Gel Time @ 177 °C (350 °F)	73 min	20.5 min	16 min
	Flexural Strength (ksi)	18.5	19.5	19.0
	Flexural Modulus (ksi)	445	470	495
	Tensile Strength (ksi)	10.5	15.0	12.0
	Tensile Modulus (ksi)	380	455	465
	Tensile Elongation,%	3.7	7.0	4.4
	Moisture Absorption wt. % (14 Day Water Boil)	1.9	3.6	4.2
	Tg (TMA), °C	210	203	246
	Tg (DMA Tan δ), °C	234	218	276
	CTLE (below Tg, ppm/°C)	59	60	55
	Chemical Resistance			
			% weight change*	
	Reagent	**1**	**2**	**3**
	JP4 Fuel	<0.5	<0.5	<0.5
	Hydraulic Fluid (Skydrol 500B-4, Monsanto)	<0.5	<0.5	<0.5
	De-icing Fluid (Propylene-Glycol mixture)	<0.5	<0.5	<0.5

* Following a 28-day immersion

FORMULATIONS (CONTINUED)

Electrical Properties

	Frequency Constant	Dielectric Factor	Dissipation
Tactix® 556	1 kHz	4.14	0.0116
	10 kHz	4.05	0.0208
	50 kHz	3.95	0.0263
	100 kHz	3.90	0.0269
Araldite® EPN 1139	1 kHz	4.50	0.0167
	10 kHz	4.36	0.0259
	50 kHz	4.23	0.0289
	100 kHz	4.18	0.0289
Araldite® EPN 1138	1 kHz	4.86	0.0207
	10 kHz	4.68	0.0310
	50 kHz	4.51	0.0365
	100 kHz	4.44	0.0370

PACKAGING & STORAGE

Tactix 556 is packaged in 500 pounds drums. The shelf life is two years if stored at room temperature.

Tactix 756 is packaged in 150 pounds fiber drums. It has a shelf life of five years if the storage temperature is below 65°F.

HANDLING PRECAUTIONS

Personal hygiene

Safety precautions at workplace	
protective clothing	yes
gloves	essential
arm protectors	recommended when skin contact likely
goggles/safety glasses	yes
Skin protection	
before starting work	Apply barrier cream to exposed skin
after washing	Apply barrier or nourishing cream
Cleansing of contaminated skin	
	Dab off with absorbent paper, wash with warm water and alkali-free soap, then dry with disposable towels. Do not use solvents
Disposal of spillage	
	Soak up with sawdust or cotton waste and deposit in plastic-lined bin
Ventilation	
of workshop	Renew air 3 to 5 times an hour
of workplaces	Exhaust fans. Operatives should avoid inhaling vapours

FIRST AID

Contamination of the *eyes* by resin, hardener or mix should be treated immediately by flushing with clean, running water for 10 to 15 minutes. A doctor should then be consulted.

Material smeared or splashed on the *skin* should be dabbed off, and the contaminated area then washed and treated with a cleansing cream (see above). A doctor should be consulted in the event of severe irritation or burns. Contaminated clothing should be changed immediately.

Anyone taken ill after *inhaling* vapours should be moved out of doors immediately.

In all cases of doubt call for medical assistance.

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Main Office :
Huntsman Advanced Materials (Switzerland) GmbH
Klybeckstrasse 200
CH-4057 BASEL
Switzerland
+41 61 966 3333