



PEXIDAN[®] V/T

Low density moisture curable polyethylene system
for low voltage building wire, control cable and cable tray applications
(UL styles SIS, XHH, XHHW, XHHW-2, RHH, RHW, and RHW-2 VW-1)¹.

DESCRIPTION

PEXIDAN[®] V/T is a low density flame-retardant XLPE system curable by moisture and consists of a silane-grafted base compound A-3001 and a flame-retardant catalyst masterbatch CAT-010FR. Mixed and extruded in the proper proportions (50/50), the two components result in a material that is curable by exposure to hot water. PEXIDAN[®] V/T is halogenated but is RoHS-compliant.

¹ Also CSA listed for RW-90 and CIC (-40C rated)

Physical and Mechanical Properties	Typical Value	Unit	Test Method
- Specific gravity at 23°C	1.30	g/cm ³	ASTM D792
- MFR, 190°C/2.16 kg	0.8	g/10 min	ASTM D1238
- Mechanical properties: Tensile strength at break Tensile strength at yield Elongation at break	1850 1600 275	psi psi %	UL 1581 / UL 2556
- Mechanical Properties: after thermal ageing (7d @121°C): Tensile strength at break Elongation at break After 60 day oil @75°C Tensile strength at break Elongation at break After 30 day gasoline @23°C Tensile strength at break Elongation at break	1700 225 1840 300 1750 250	psi % psi % psi %	UL 1581 / UL 2556
- Deformation	1	%	UL 1581 / UL 2556
- Hot set test, 15 minutes @ 150°C, 0.2 N/mm2 load: Elongation under load	50	%	SACO AEI DWI-QA-4007 based on ICEA T-28-562
- Crushing Test	1275	lb	UL 1581 / UL 2556
- Dielectric Constant (Relative Permittivity) @ 90°C	3.2		UL 1581 / UL 2556
- Dielectric Breakdown After glancing impact	21.5 18	kV	UL 1581 / UL 2556
- Degree of Crosslinking	60	%	ASTM D2765
- Low Temperature Brittleness Point (LTBP)	Below -45	°C	ASTM D746
- Insulation Resistance @15°C @90°C After 12 weeks @90°C	34,000 25,000 29,000	MΩ-1000 ft.	UL 1581 / UL 2556
- Limiting Oxygen Index (LOI)	27	%	ASTM D2863

Typical values reported above (except MFR) are obtained from a 14 AWG wire with 30-mil wall thickness, cured in hot water (6 hours @ 95°C).

PROCESSING

The pre-grafted base PEXIDAN[®] A-3001 must be added with type CAT-010FR flame retardant catalyst masterbatch in the proportion 50:50 by weight. We strongly suggest dosing the two components directly in the throat of the extruder using a gravimetric or loss-in-weight feeder. In order to prevent scorching the grafted compound and the catalyst masterbatch must be stored separately and mixed just prior to consumption.

PEXIDAN[®] V/T can be processed with PE single screw extruders having proper temperature control and a good mixing screw (2.5:1 ratio at least).

The following temperature profile is suggested:

barrel zones:	from 310 to 340 °F
head:	365 °F
die:	365 °F
screw:	neutral

These conditions may depend on the equipment being used. It is recommended using conveyors and tools shaped in order to prevent stagnation in the head. In case of prolonged shutdown, purge the extruder with LDPE.

Curing can be done in the following ways:

- by immersion in hot water at 70-95 °C
- by exposure to low pressure steam

In all cases curing time depends on wall thickness, temperature, relative humidity and quantity of wire on the reel.

A wide range of commonly used color masterbatches based on LDPE are available. A use level of 1.5% by weight should give an acceptable color but this will be dependent upon the concentrate itself. Levels of concentrates should be kept to a minimum because they can detract from performance. It is recommended that the catalyst and color masterbatches be dried prior to usage 4-6 hours at 60 °C (150 °F) using a desiccant dryer.

STORAGE

Due to the moisture sensitivity of PEXIDAN[®], SACO AEI Polymers suggests that the following points should be considered when storing the materials:

- Ambient temperature generally not exceeding 30 °C
- Avoid direct exposure to sunlight and weathering
- Once the package has been opened it is suggested that the entire contents be used.

PACKAGING

The physical form of both PEXIDAN[®] A-3001 and CAT-010FR is free flowing pellets, available in 1500 lb (680 kg) and 2000 lb (907 kg) gaylords respectively, or in 300 lb (136 kg) fibre drums.

Our technical team is at your disposal for further information and assistance.

The technical information contained herein is, to the best of our knowledge, believed to be accurate. However, SACO AEI Polymers makes no guarantee or warranty, and does not assume any liability, with respect to the accuracy or completeness of such information. Suitability of material for a specific final end use is the sole responsibility of the user. The data contained herein are typical properties only and are not to be used as specifications.

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