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Customized Solutions for Diverse Applications

PEXIDAN™ V/T-2

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-2 is a low density XLPE system curable by moisture and consists of a silane-grafted base compound A-3001 and a catalyst masterbatch CAT-045FR. 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-2 is a RoHS-compliant system.

[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	1.32	g/cm^3	ASTM D792
- MFR, 190°C/2,16 kg (base compound)	1.0	g/10 min	ASTM D1238
- Mechanical properties: tensile strength at break elongation at break	 2200 400	 psi %	UL 1581
- 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 @ break Elongation @ break	 2400 400 2200 400 2100 375	 psi % psi % psi %	UL 1581
-Deformation	5	%	UL 1581
- Hot set test, 15 minutes @ 150°C: elongation under load	 45	 %	SĀCO Polymers DWI-QA-4007 based on ICEA T-28-562
- Crushing Test	1290	lb	UL 1581
- Dielectric Constant (Relative Permittivity) @ 90°C	3.1		UL 1581
- Dielectric Breakdown after glancing impact	36 11	kV	UL 1581
- Degree of Crosslinking	60	%	ASTM D2765
-Insulation Resistance @15°C @90°C after 12 weeks @90°C	10,000 6100 3600	GΩ-meter	CSA C22.2 No. 38/UL44
- FV-2 / VW-1 Flame Test	PASS		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-045FR 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-2 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™, SĀCO 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-045FR 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 Service is at your disposal for further information and assistance.

sāco polymers

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