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Customized Solutions for Diverse Applications

PEXIDAN® L/T

High density moisture curable polyethylene compound for hot and cold water plumbing pipe. Suitable for SDR 9 pipe applications in continuous service at operating conditions of 140°F and 80 psi.

Description

Pexidan® L/T (including L/T Eclipse) is a high density PEX System consisting of a silane grafted base-compound A-1001 and a catalyst masterbatch CAT-003 (or A-1022 and CAT-117). When mixed and extruded in the proper proportions, the two-component system results in a material that is crosslinked by exposure to moisture or by immersion in hot water at 90-95°C. Pexidan® L/T is listed by NSF International to Standards 14 and 61 and to Canadian Standards Association standard B137.5. NSF certification to ASTM F 876 and ASTM F 2023 testifies to its superior resistance to oxidation by hot, chlorinated water. Pexidan® L/T is permitted to be used in domestic continuous re-circulation systems and is listed by NSF as a NSF-pw CL5 / PEX 5006 material.

Physical and mechanical properties	Typical value	Unit	Test method
- Specific gravity @ 23°C	0.946		ASTM D 792
- MFR, 190°C/2.16 kg	0.7	g/10 min.	ASTM D1238
Hydrostatic Design Basis (HDB) @ 68% DOC			ASTM D 2837
- 73°F (23°C)	1 250	psi	
- 180°F (82°C)	800	psi	
- 200°F (93°C)	630	psi	
Mechanical properties:			
At 23°C			ASTM D 638
-Tensile strength at yield	3100	psi	
-Elongation at yield	9	%	
-Tensile strength at break	3425	psi	
-Elongation at break	240	%	
At 82°C			
-Tensile strength at yield	1625	psi	
-Elongation at yield	12	%	
-Tensile strength at break	1740	psi	
-Elongation at break	200	%	
At 93°C			
-Tensile strength at yield	1260	psi	
-Elongation at yield	14	%	
-Tensile strength at break	1740	psi	
-Elongation at break	240	%	
- Flexural elastic modulus:			ISO 178
@ -40°C	75 000	psi	
@ 0°C	55 000	psi	
@ 23°C	30 000	psi	
- Hot Elongation test, 15 minutes @150°C, 0.2 N/mm ² load:			Sāco Polymers DWI-QA-4007 based on ICEA T-28-562
elongation under load	30	%	
permanent elongation (set) after cooling	0	%	
- Oxidative Induction Time (OIT) @ 220°C	>50	minutes	ASTM D 3895
- Vicat softening point	124	°C	ASTM D 1525
- Specific heat @ 23°C	1.92	J/(g °K)	
- Linear expansion coefficient (between -100°C and +85°C)	1.5 x10 ⁻⁴	1/°K	ASTM D 696

- Young's modulus: @ -40°C @ 0°C @ 23°C	335 000 245 000 125 000	psi psi psi	ISO 527
- Degree of Crosslinking	70	%	ASTM D 2765

Typical values reported above (except MFR) are obtained from samples cured in hot water (6 hours @ 95°C).

Processing

The grafted base resins A-1001 or A-1022 must be mixed with type CAT-003 or CAT-117 catalyst masterbatch in the proportion 95:5 by weight. Mixing must be done just before consumption. Introduction of the component mixture directly in the hopper of the extruder using a gravimetric or loss-in-weight feeder is strongly recommended to obtain accurate mixtures. Pexidan® L/T and L/T Eclipse can be processed with single screw extruders having proper temperature control and a good mixing PE screw (2.5:1 ratio at least).

The following temperature profile is suggested:

barrel zones:	from 320 to 350°F
head:	365°F
die:	365°F
screw:	Neutral (no screw cooling)

These temperatures may depend on the equipment being used. All tooling should be designed to prevent stagnation of the material anywhere in the system. In case of prolonged shutdown, purge the extruder with HDPE.

Curing can be done in the following ways:

- by immersion in hot water at 90-95°C
- by exposure to low pressure steam

In all cases curing time depends on pipe wall thickness, temperature, relative humidity and any packaging used.

It is suggested that the catalyst and color masterbatches be dried for 4-6 hours at 60°C (150°F) in a desiccant dryer prior to usage.

Storage

Due to the moisture sensitivity of Pexidan® L/T materials, Sāco Polymers suggests that the following points be considered when storing the materials:

- Maintain at ambient temperature 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

A-1001, A-1022, CAT-003 and the CAT-117 masterbatches are all available in 1400-lb (635-kg) gaylords or 300-lb (136kg) fibre drums.

Our Technical Service 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, Sāco 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 be used as specifications.



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