



PEXIDAN® J/T

Low density moisture curable polyethylene compound
for SAE J1128 Automotive wire applications.

DESCRIPTION

PEXIDAN® J/T is a low density flame-retardant XLPE system curable by moisture and consists of a silane pre-grafted base compound A-3001 and a flame-retardant catalyst masterbatch CAT-012FR. Mixed and extruded in the proper proportions (60:40), the two components result in a material that is curable by exposure to 70-95 °C hot water or even ambient moisture. PEXIDAN® J/T is designed to meet SAE J1128 standards for GXL, TXL and SXL type insulation. PEXIDAN® J/T is halogenated but is RoHS-compliant.

| Physical and Mechanical Properties | Typical Value | Unit | Test Method |
|---|-------------------------------|----------|---|
| - Specific gravity at 23 °C | 1.13 | | ASTM D792 |
| - Mechanical properties: Tensile strength at break Elongation at break | 2300 300 | psi % | SAE J1128 Section 6.3 |
| - Mechanical Properties: after thermal ageing (7d @155 °C): Tensile strength at break Elongation at break | 2400 400 | psi % | SAE J1128 Section 6.3 |
| - Dielectric withstand | Pass | | SAE J1128 Section 6.4 |
| - Cold Bend | No cracking / pass dielectric | | SAE J1128 Section 6.5 |
| - 45 degree Flame Propagation Test | Pass | | SAE J1128 Section 6.6 |
| - Fluid Compatibility Engine oil, Gasoline, Ethanol, Diesel, PS fluid, Trans fluid, Engine Coolant and Battery Acid | <1.5% swell, No cracking | % | SAE J1128 Section 6.7 |
| - Resistance to Ozone | No cracking/pass dielectric | | SAE J1128 Section 6.8 |
| - Resistance to Pinch | 2.4 | kg | SAE J1128 Section 6.9 |
| - Resistance to Sandpaper Abrasion | 4000 | mm | SAE J1128 Section 6.10 |
| - Insulation Volume Resistivity | 10 ¹¹ | Ω-mm | SAE J1128 Section 6.14 |
| - Hot Elongation, 15 minutes @150 °C, 0.2 N/mm ² load: Elongation under load | 50 | % | SACO AEI DWI-QA-4007 based on ICEA T-28-562 |
| - Degree of Crosslinking | 65 | % | ASTM D2765 |

Typical values reported above (except MFR) are obtained from 20 AWG wire with wall thickness of 0.015", cured in hot water (6 hours @ 95 °C).

PROCESSING

The pre-grafted base PEXIDAN® A-3001 must be added with type CAT-012FR catalyst masterbatch in the proportion 60:40 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® J/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
- ambient atmospheric moisture

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-012FR is free-flowing pellets, and are 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 be used as specifications.