

MDPE Optical Cable Sheath Material Formula



Overview

Standard LSZH (Low Smoke Zero Halogen) material is produced from polyolefin's and is filled with flame-retardants in the form of aluminium or magnesium hydroxide.

Key Takeaways

MDPE sheaths for optical cables are primarily composed of medium density polyethylene with UV stabilizers, carbon black, and optional additives for abrasion, chemical, and fire resistance.

Core Composition

The standard MDPE (Medium Density Polyethylene) used for optical cable sheaths consists of: Base polymer: Medium density polyethylene (MDPE), providing high strength, hardness, and low dielectric constant.

U

V stabilizer: Typically $2.5 \pm 0.5\%$ carbon black to protect against ultraviolet degradation and ensure long-term outdoor durability.

Optional additives: Flame retardants (e.g., aluminum hydroxide or magnesium hydroxide) for LSZH (Low Smoke Zero Halogen) variants. Silicon elastomers and chalk fillers for fire-resistant compounds. Hindered amine light stabilizers (HALS) for enhanced weathering stability.

Physical and Chemical Properties MDPE sheaths are chosen for their excellent abrasion resistance, high hardness, and oxidation resistance. Compared to other polyethylene types: LDPE: MDPE has higher strength and better mechanical durability.

HDP

E: MDPE offers improved resistance to stress cracking while maintaining comparable chemical resistance. The material is resistant to water, dilute and concentrated alkalis, oils, aliphatic hydrocarbons, esters, ketones, and ethers at moderate temperatures, making it suitable for outdoor and direct-burial installations.

Optional Outer Jackets

For enhanced performance, MDPE sheaths can be overlaid with: PA12 jacket: Provides a hard, smooth surface, improved rodent protection, and reduced friction in ducts.

P

P jacket: Adds hardness and some rodent protection while slightly reducing friction.

Color and Standards

Standard sheath colors include black, orange, red, green, blue, and violet, with other colors available per IEC 304 or customer specifications.

MDP

E sheaths conform to ASTM D1248, Type II, Class C, Category 4, Grade J4, ensuring industry-standard performance.

Summary

The MDP

E optical cable sheath formula is essentially medium density polyethylene with carbon black for UV protection, optionally enhanced with flame retardants, HALS, or elastomer fillers depending on application requirements. This combination ensures mechanical durability, chemical resistance, and long-term outdoor performance, making it a preferred choice for optical fiber cables in harsh environments.

Article Content

CABLE PROTECTION AND SHEATHING

Standard LSZH (Low Smoke Zero Halogen) material is produced from polyolefin's and is filled with flame-retardants in the form of aluminium or magnesium hydroxide. This sheathing compound is

Analysis Of Optical Cable Sheath Materials: All-round

Medium-density polyethylene sheath material is made by blending high-density polyethylene and low-density polyethylene in an appropriate proportion, or by

MDPE (KPM0801-II) Medium-Density Polyethylene Cable Sheath

KPM0801-II is a cost-effective black MDPE (Medium-Density Polyethylene) cable sheath material, specially formulated for optical cable insulation and general wire applications.

Technical Data Sheet Product Name SCGC™ MD

Please see our Material Safety Data Sheet for details on various aspects of safety, recovery, and disposal of the products; for more information, contact your SCG Chemicals technical services.

An In-Depth Guide to Mdpe For Optic Cable Sheath: Standards,

MDPE sheaths safeguard optic cables from moisture, mechanical stress, temperature variations, and electromagnetic interference. Below are the primary types of MDPE used in optic cable sheathing,

MDPE Plastic Environmental Friendly Polyethylene

Black medium-density environmental friendly recycled polyethylene sheath material MDPE adopts a special base material formula and adds a variety of additives.

CN1356352A

A middle-density polyethylene material used for protective sleeve of optical cable is prepared from high-density polyethylene, linear low-density polyethylene, carbon black, Si modifier and...

Total MDPE 3802 Medium Density Polyethylene, Cable

MDPE 3802 is a natural medium density polyethylene particularly suited for colored cable sheathing applications and designed to meet the requirements for telecommunication and power cables

Medium Density Polyethylene (MDPE)

Most cable sheath manufacturers can only use blending. The full-density polyethylene production facilities introduced by Maoming Petrochemical and Zhongyuan Ethylene Company have

Tipos de cubiertas en Cables de Fibra Optica | KeyFibre

Types of sheaths used in Fibre Optic Cables Each type of fibre optic cable sheath has its differences, mainly, its function is to cover the inside, but it has several advantages or disadvantages that make it

Polyethylene (PE) optical cable sheath material: performance

Material introduction Polyethylene (PE) optical cable sheath material is an outer protective material designed for optical fiber cables, with excellent mechanical strength, weather resistance and

28 Selection_of_the_Correct_Optical_Cable

Introduction This Cable Jacket Selection Note is intended to provide the reader with an organized selection methodology when selecting the optimum optical cable for a specific application. Sheath

MDPE/HDPE 12/24/48/96 Core SJ ADSS Fiber Cables With Kevlar

All-Dielectric Design: With no metal components, the ADSS cable is immune to electrical interference, making it perfect for installations near high-voltage power lines. MDPE/HDPE Sheath:

CABLE PROTECTION AND SHEATHING

GENERAL Below features show a general approach to plastic materials used for fiber optic Cable sheathing and jacketing in the world market. But, these do not cover all materials used for fiber optic

Ficha_AR-1NSU-ADSS-PE-50M-xxF-G652D

3. Optical Cable 3.1 General Design Optical fibres are housed in loose tubes that are made of high-modulus plastic and filled with waterproof compounds. Aramid yarns are applied to provide high

The advantages for MDPE to be cable sheath

This helps MDPE finds particular usage in transmission cables in the toughest of environments, notably those with the high ambient temperatures found in tropical and subtropical

A Guide to Cable Sheaths and Jacket Types

There are a wide variety of different cable sheaths and jackets which all serve a different purpose. Understanding the difference helps you make an informed decision when it comes to

Cable Sheath Materials

Insulation and sheath are the components of a cable that protect the conductor. The insulation isolates the flow of electricity, and the sheath wraps around the outside of the cable to

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

