

Advanced flame-retardant materials for safer cables

In environments where fire risks can threaten safety and business continuity, the right flame-retardant materials make all the difference. Dow offers a comprehensive portfolio of halogen-free flame-retardant (HFFR) materials comprising both resins and fully formulated compounds to address demanding regulatory and performance standards.



Resin toolbox for HFFR compounds

Our versatile resins give compounders and cable producers the flexibility to formulate tailored, high-performance compounds that enhance fire protection across demanding cable applications. Our high quality resin families each contribute distinct performance characteristics - helping achieve the right balance of mechanical strength, flame-retardant behavior, and processing efficiency for a wide range of HFFR cable designs.

Table 1: Dow's high quality product families for HFFR compounds

COMPONENT	POLYETHYLENE	NON-POLAR COPOLYMERS	POLAR COPOLYMERS	COUPLING AGENTS	SILICONES ADDITIVES
	Attane™ ULDPE copolymers Dowlex™ polyethylene resins Elite™ AT advanced technology resins LLDPE linear low density polyethylene resins LDPE low density polyethylene resins	Engage™ polyolefin elastomers Infuse™ olefin block copolymers Nordel™ EPDM Intune™ olefin block copolymers Versify™ plastomers and elastomers	Elvax™ ethylene vinyl acetate copolymers Elvaloy™ copolymers for alloys	Nucrel™ acid copolymers Fusabond™ functional polymers	DOWSIL™ XIAMETER™ silicones simplified
VALUE	- Tensile strength - Hot deformation resistance - Electricals	- FR acceptance - Tensile elongation - Flexibility - Low temperature flexibility - Impact strength	- Oil resistance - FR performance - Impact strength	Compatibility with fillers for mechanicals	Processing FR performance

Fully formulated HFFR compounds

UNIGARD™ Flame-Retardant Compounds are engineered to help safeguard grids against electrical fires and cable failures — even under extreme conditions. Each grade is designed to balance mechanical strength, processability, and fire performance, helping protect people and critical infrastructure across power distribution, industrial environments, and communication networks.



Table 2: UNIGARD™ Flame-Retardant Compounds

Market segment	Grade	Application
Energy and Industrial • Transit • Shipboard jacket • Control cable	HFDA-6525 NT	Crosslinkable insulation
	DFDA-1638 NT	Tray cable, IEC 60332-3, LOI: 39%, density: 1.5 g/cm ³
	DFDC-1638 BK	Tray cable, IEC 60332-3
	DFDA-1648 NT	Tray cable, IEC 60332-3, LOI: 39%, density: 1.45 g/cm ³
Power • High and extra high voltage cable	DFDA-1612 BK EXP	High voltage ST12 cable jacket
Communications • Fiber optic jackets and buffer tube • Copper data cable jackets	DFDA-1638 NT	Jacket, buffer tube, LOI: 39%, density: 1.5 g/cm ³
	DFDC-1638 BK	Blue Jacket, LOI: 40%, density: 1.5g/cm ³
	DFDA-1648 NT	Jacket, buffer tube, LOI: 39%, density: 1.45g/cm ³
	DFDA-5120 NT	Jacket, UL1666 riser
	DFDA-5100 NT EXP	Buffer tube

Get in touch

We look forward to the opportunity to collaborate with you and support the selection of the most suitable HFFR solution for your application.

Contact your Dow representative, your nearest Dow location, or visit www.dow.com for more information.

About Dow

Dow (NYSE: DOW) is one of the world's leading materials science companies, serving customers in high-growth markets such as packaging, infrastructure, mobility and consumer applications. Our global breadth, asset integration and scale, customer-focused innovation and leading business positions enable us to achieve profitable growth and help deliver a sustainable future. We operate manufacturing sites in 29 countries and employ approximately 34,600 people. Dow delivered sales of approximately \$40 billion in 2025. References to Dow or the Company mean Dow Inc. and its subsidiaries. Learn more about us at www.dow.com.

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