

# DuPont Innovative Solutions for the Wire & Cable Market

November 10, 2021

DuPont Mobility & Materials



# About the Presenters



**Barbara Meunier**

EMEA Marketing Manager  
– Electrical & Electronics

DuPont Mobility & Materials



**Maria-Luisa Paredes**

EMEA Business Development  
Consultant for Wire & Cable

DuPont Mobility & Materials



**Klaus Kammerer**

Senior Technical Consultant for  
Vamac® elastomers in EMEA

DuPont Mobility & Materials

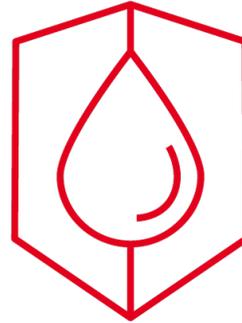
# Agenda

- DuPont and DuPont Mobility & Materials
- Market Trends and Challenges
- DuPont Performance Materials Portfolio for Wire & Cable
- Our Offerings and Capabilities for Wire & Cable Designs
- Q&A

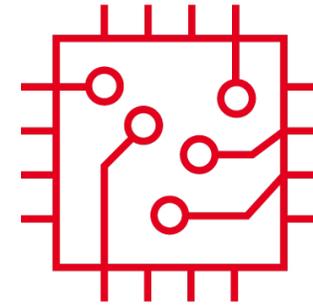
# DuPont Today: Premier Multi-industrial with Market-leading Businesses



**Mobility & Materials**  
**\$4.0B**



**Water & Protection**  
**\$5.0B**



**Electronics & Industrial**  
**\$4.7B**

---

**\$13.7B**  
2020 Net Sales

**23,000+**  
Colleagues

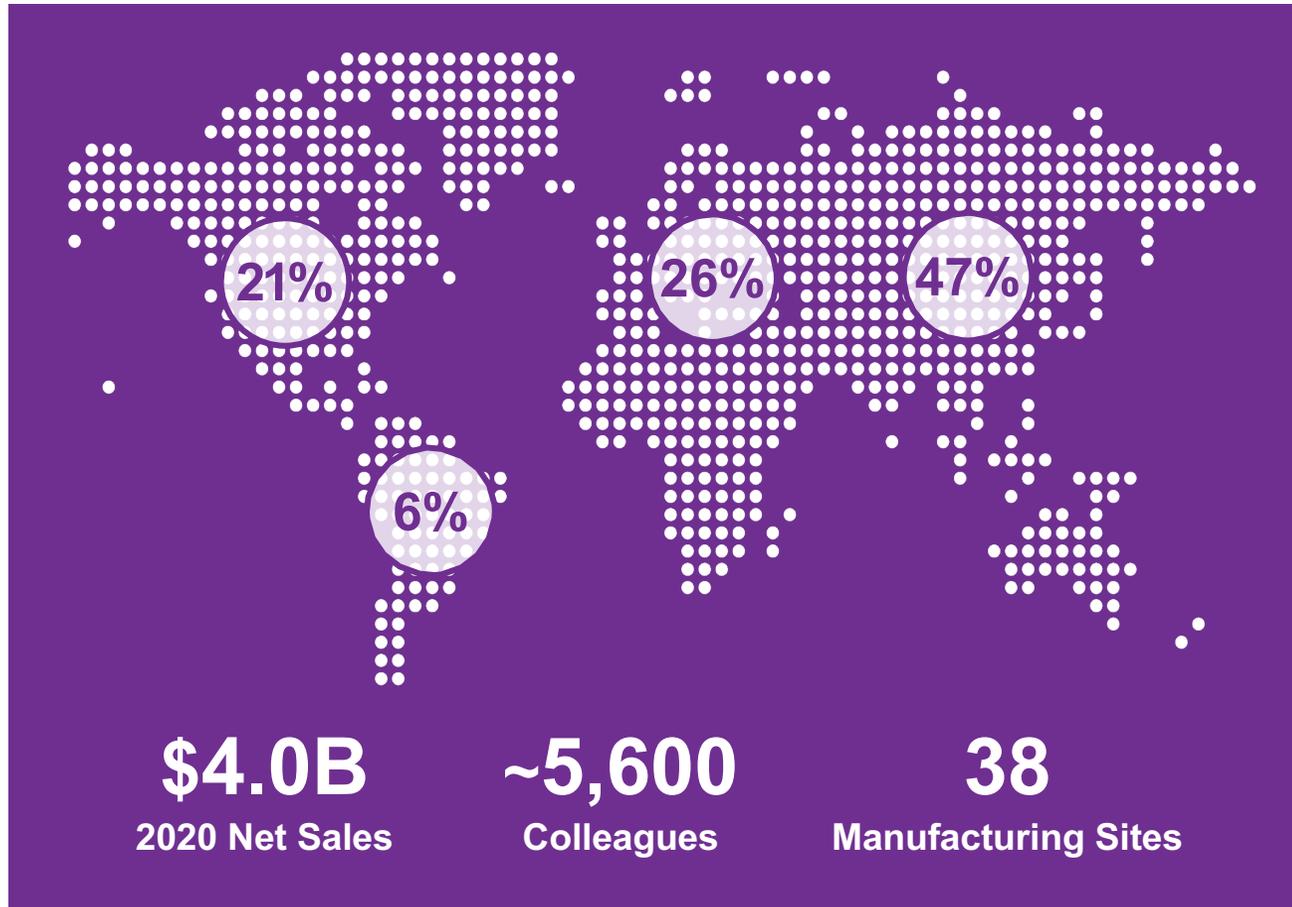
**40+**  
Countries

**~90**  
Manufacturing  
Sites

**10**  
Major R&D  
Centers

# At a Glance: Mobility & Materials

**Purpose: Transforming Industries and Improving Lives Through Material Science**



# Wire & Cable Segment Key Messages



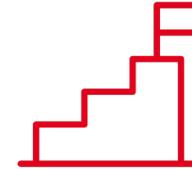
## Our Purpose (Why)

Create a much safer and sustainable world



## Our Goal (What)

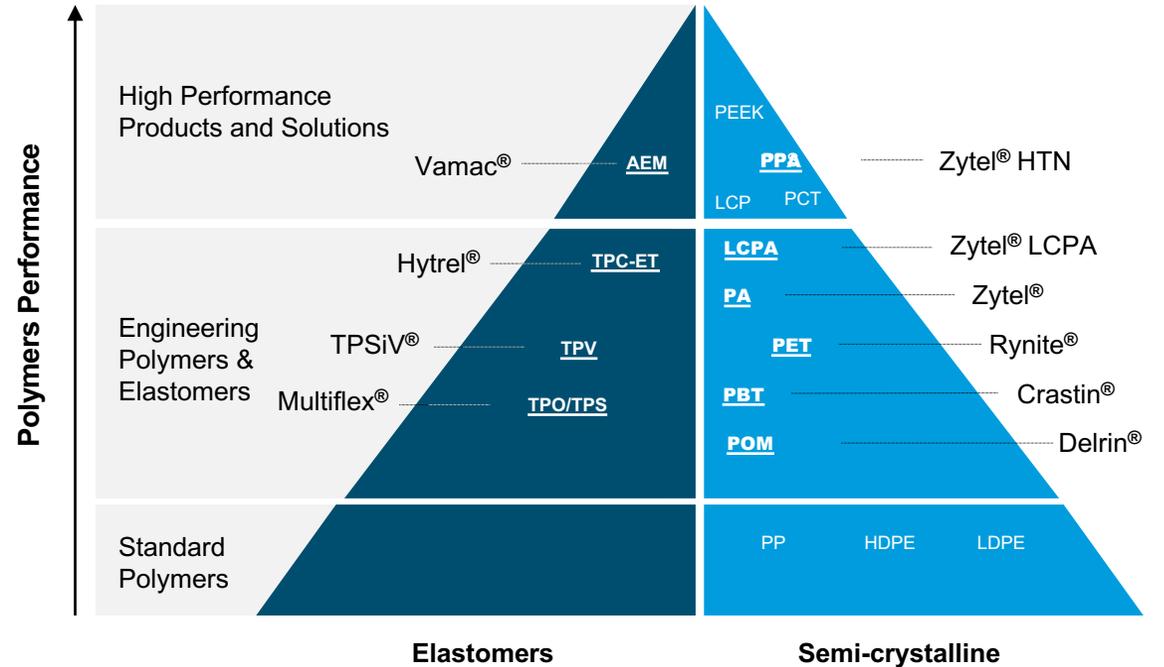
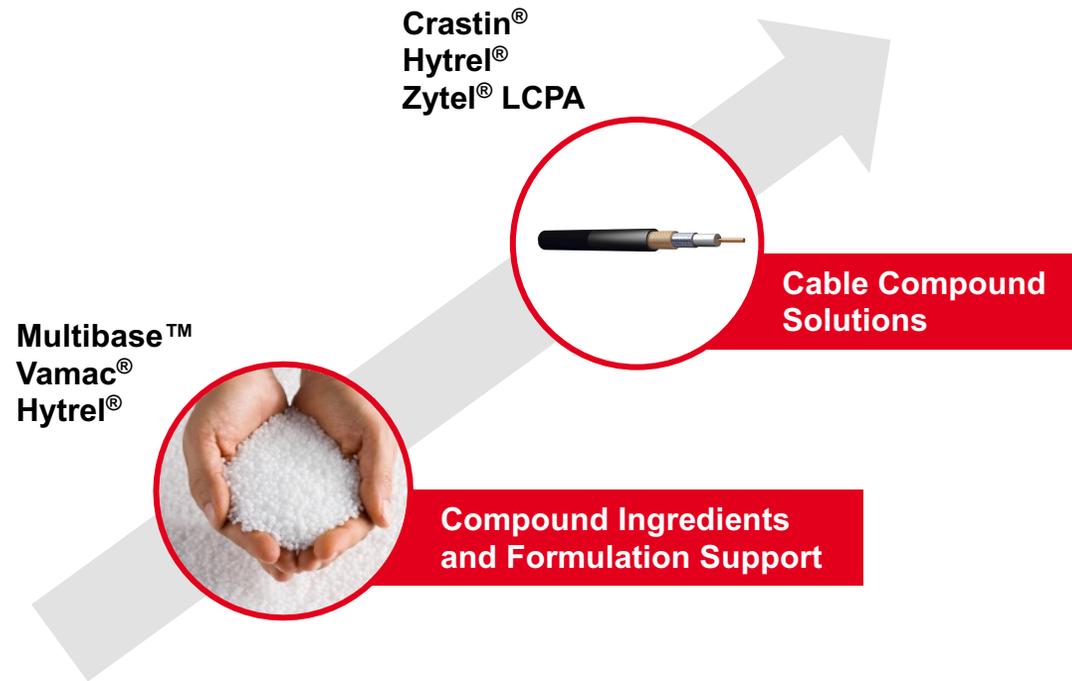
Innovation driven to become No.1 provider of high performance, flexible, safe and reliable solutions for the wire & cable industry



## Our Approach (How)

- **Build Capability**  
Continuously build our capability on flexible solutions including NHFR, sustainable (bio-based, recyclable) and high temperature resistance
- **Strengthen Collaboration**  
Build key accounts and channel management center of excellence
- **Focus on Strategic Market**  
Deliver growth on the identified strategic market and application

# Addressing Needs for the Entire Value Chain



## DuPont Solutions for Wire & Cable

- Hytrel®:** Thermoplastic polyester elastomer
- Vamac®:** Ethylene acrylic elastomer
- Crastin®:** Polybutylene terephthalate
- Zytel® LCPA:** Long chain polyamide
- Multibase™:** Silicone masterbatches

# Segment Overview – Key Applications

---

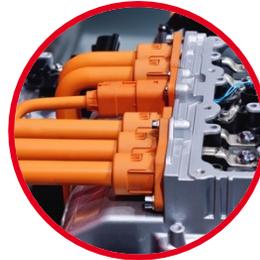
## Optical Fiber Cables



Focus: Thinner wall designs, NHFR, and low smoke solutions  
**Key offerings: Hytrel®, Crastin®**

---

## Automotive and New Energy Vehicles



Focus: Thinner wall designs, high continuous use temperature, media resistance  
**Key offerings: Hytrel®, Vamac®**

---

## HFFR Modification



Focus: Improved processability, improved flammability in PO NHFR formulations  
**Key offering: Multibase™**

---

## Industrial



Focus: Higher flex fatigue and media resistance, high continuous use temperature  
**Key offerings: Hytrel®, Zytel® LCPA**

---

## Transportation



Focus: NHFR & low smoke solutions  
**Key offering: Vamac®**

---

## Consumer Electronics



Focus: NHFR, low smoke and bio-based solutions  
**Key offering: Hytrel®**

# Major Trends in Wire & Cable



## Digitalization

- FTTH march to continue
- 5G accelerating worldwide
- Growth of hyperscale data centers
- IoT devices
- Densification of access networks



## Mobility

- Electrification
- Charging infrastructure
- Thinner, lighter solutions – minimize carbon footprint



## Industrialization & Automation

- Factory automation
- Data communication technology

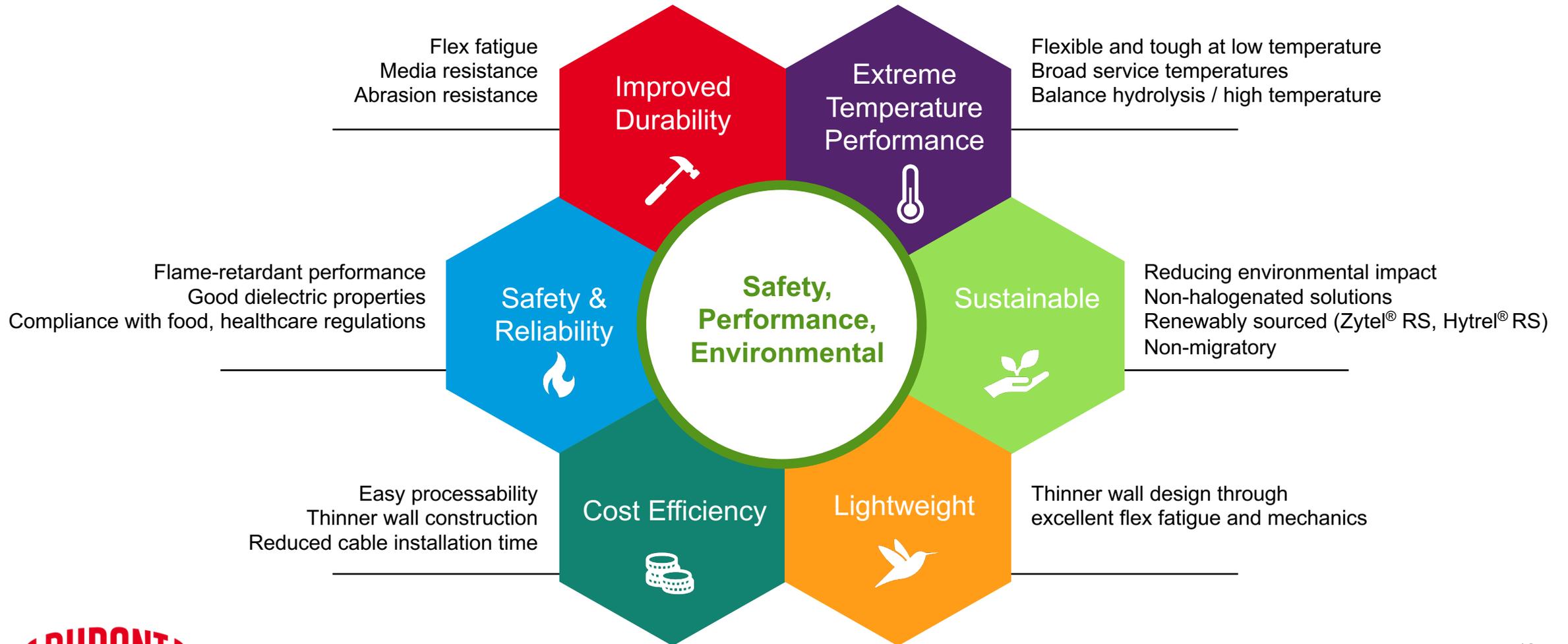


## Safety & Sustainability

- Environmental awareness
- Energy transition: renewably sourced
- Fire performance and hazards

# Wire & Cable Industry Challenges and DuPont Solutions

**Our Cable Insulation and Jacketing Materials Are at the Core of Strong, Flexible, Durable Connections Around the World**



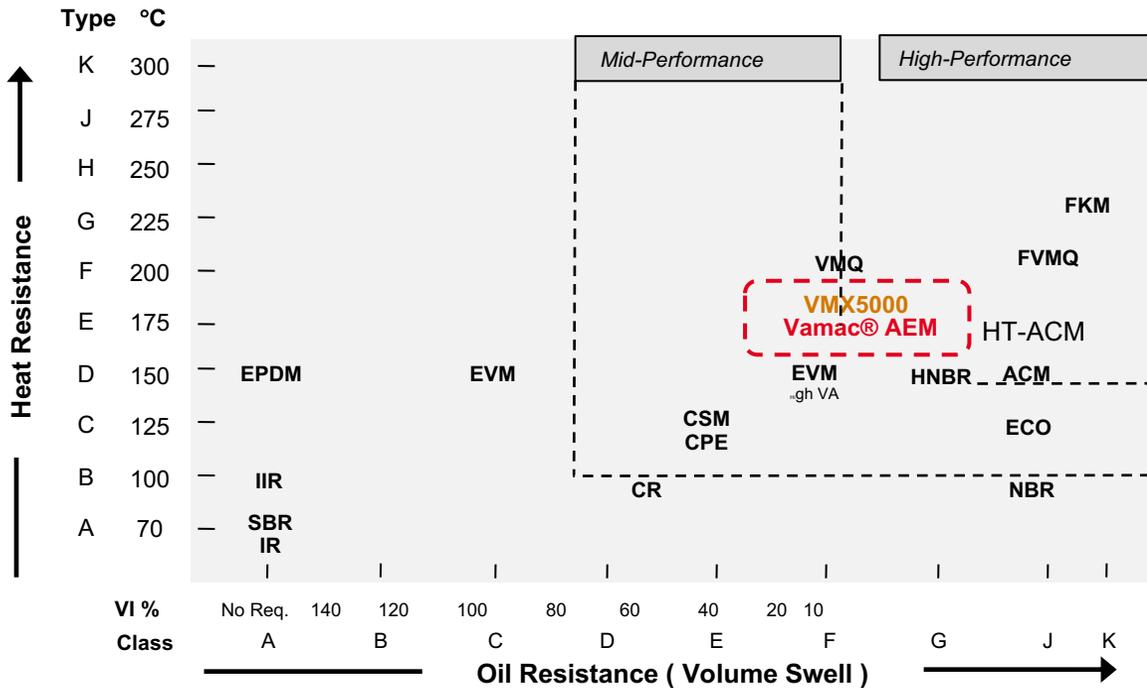
# Vamac®

Flexible Elastomer Solutions for Wire & Cable Insulation and Jacketing



# Vamac® – Ethylene Acrylic Elastomer

Vamac® is an ethylene acrylic elastomer used in applications requiring heat and chemical resistance, and specific rubber-like qualities.



<sup>1</sup> Classification inspired by ASTM D2000 standard  
<sup>2</sup> Maximum temp. at which a vulcanizate can be aged for 70 hours and still retain at least 50% of its elongation  
<sup>3</sup> % volume swell in ASTM IRM 903 Oil, 70 hrs exposure

## Vamac® for HFFR Wire & Cable Formulations

Vamac® elastomers are used as the **base polymer** for cable sheathing or jacketing thermoset elastomer compounds for highly flexible, heat- and oil-resistant cables.

Vamac® provides an excellent alternative, when decomposition products (siloxanes, etc.) from silicone cables are causing problems.

Compounds based on Vamac® have proven records in **flame-retardant, low smoke, non-halogenated applications** to provide an excellent characteristic in combination of:

- Oil resistance
- Heat resistance
- Good low temperature flexibility



Vamac® is formulated with curatives, fillers, antioxidants, flame retardants, plasticizers, and process aids, depending on end-use requirements.

DuPont offers support in formulation development and selection of additives suitable to this high performance, high heat elastomer.

# Benefit of Vamac® for NHFR Wire & Cable Compounds

## Advantages of Vamac®

### General Properties and Processing

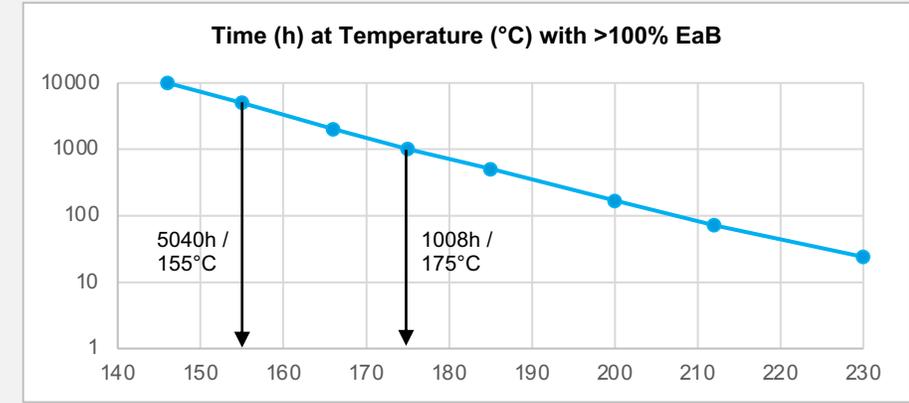
- **Highly flexible** down to -40°C (50-95 Shore A)
- **High temperature** resistance (Class D 150°C up to >5000 h)
- **Resistant to variety of fluids** (lubricants, diesel, battery acids, engine coolant, salt water, and various oils, etc.)
- Good **abrasion** resistance and electrical **resistivity** ( $>10^{12}$  Ohm-cm)
- Ozone and weather resistance
- Easy to process (fast extrusion speed with smooth surface)
- Curing flexibility (CV or E-beam)
- Colorful and applicable to **thin-wall**

### Fire-related Properties

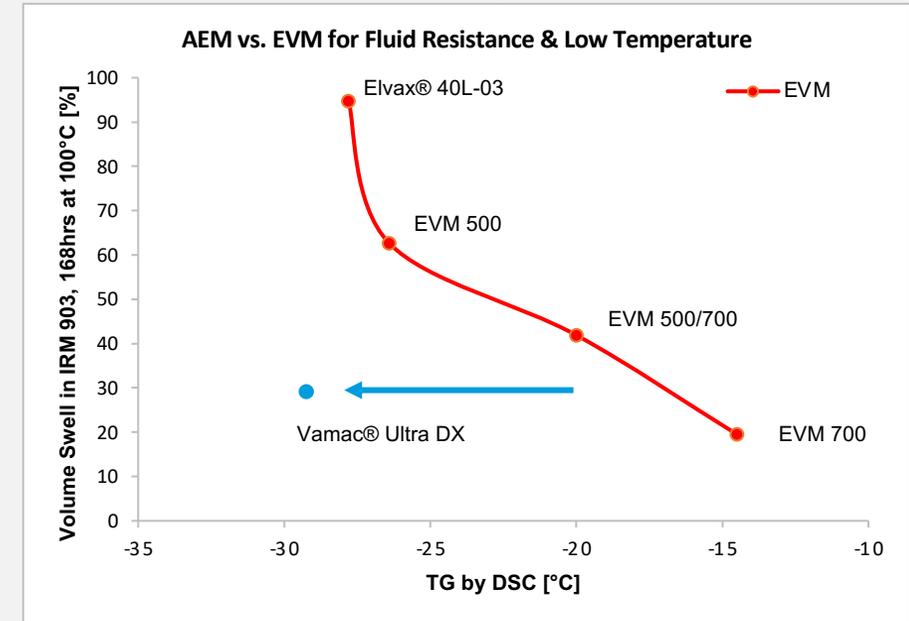
- **Non-halogen**
- Flame retardant (LOI > 35, UL-94 V-0)
- Low smoke generations
- Low fire hazard / toxic gas



## Heat Resistance, 60 Shore A Vamac Ultra DX Compound



## Oil Resistance / Low T Flexibility, Comparison to EVM



Vamac® compounds will have a ca. 10°C lower Tg at a comparable oil swell to EVM and a ~20-30% better oil resistance at the same Tg as EVM.

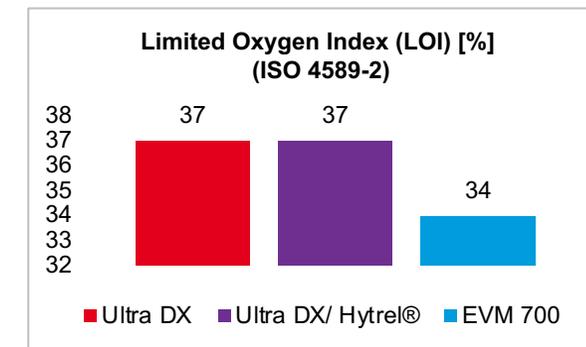
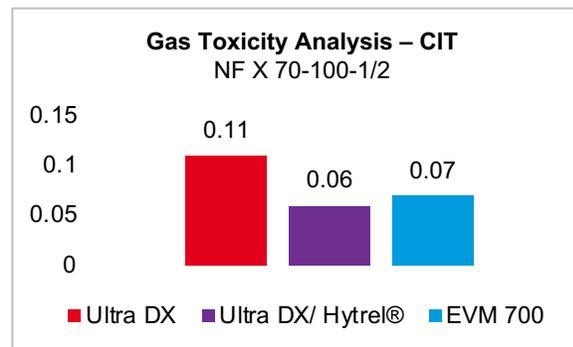
# Typical Properties of a HFFR Vamac® Ultra DX Compound

## Mechanical Properties of Vamac® and its Blends in Comparison to EVM Compounds

	Vamac® Ultra DX	Vamac® Ultra DX / Hytrel® 4056	EVM 700
<b>Press-Cure 10 Minutes at 180°C</b>			
Tg by DSC [°C]	-28	-29	-16
Low temperature bend test -30°C	Crack	no crack	Crack
<b>Tensile Properties RT</b>			
Hardness Shore A	74	92	84
Tensile Strength [MPa]	8.7	8.5	10.6
Elongation at break [%]	211	175	172
Modulus at 50 % [MPa]	2.9	6.6	5.6
Modulus at 100 % [MPa]	6.0	8.3	9.2

Hytrel® 4056 can be used in blends with Vamac® dipolymer, to formulate compounds where excellent **heat and oil resistance, low temperature flexibility, and low fire hazard properties** are key requirements.

## Flammability Performance of Vamac® and its Blends in Comparison to EVM Compounds



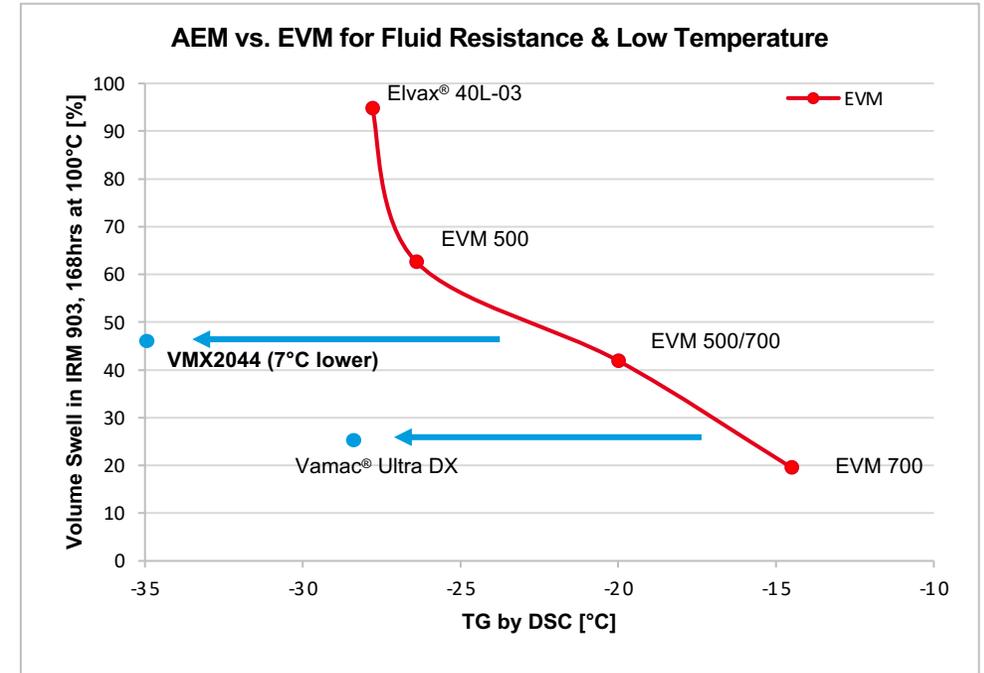
	Vamac® Ultra DX	Vamac® Ultra DX / Hytrel® 4056	EVM 700
<b>Optical Density (25kW/m²) - ISO 5659-2</b>			
Dsmax	20	21	218
VOF4	7	7	9
<b>Cone Calorimeter (25kW/m²) - ISO 5660-1</b>			
Total Heat Release THR [MJ/m²]	37	38	35
Total Smoke Release TSR [m²/s]	311	295	791
MARHE [kW/m²]	61	67	51

Vamac® is halogen free, shows low toxicity, and can be filled with high amount of ATH. Compounds based on Vamac® have high LOI, low smoke, and small total heat release.

# Innovation – Vamac® VMX2044

## Benefits of Vamac® VMX2044

- **Better processing of highly filled compounds** for smaller cable diameters through lower Mooney viscosity
- Possibility to **extrude thinner cable diameters** compared to amorphous EVM
- Reduced weight through **lower compound density** (~3% lower in identical formulations)
- **Better flexibility** at low temperature with its Tg, 7°C lower than Vamac® Ultra DX
- **Improved resistance to water-based fluids** through lower swell compared to higher MA Vamac® polymers
- Comparable properties after heat aging (better elongation at break, slightly lower tensile strength) like higher MA Vamac® grades



Formulation	Phr
Vamac® Ultra DX / Vamac® VMX2044	100
Armeen 18D PRILLS	0,5
Stearic Acid Reagent (95%)	1
Ofalub SEO	1
Naugard 445	1
Martinal OL 111 LE	150
Luperox® 101 XL 45	5
Silanogran HVS	2
Vulcofac TAIC 70	1,43
Sartomer 350 (SR 350)	1



Properties	Vamac® Ultra DX	Vamac® VMX2044
Polymer Mooney ML, 1+4, 100°C	27	18
Compound Mooney	43	30
Hardness (ShA, 1 s)	79	79
TS (Mpa)	9.5	8.6-9.1
EB (%)	193	186-213
Tg (°C) by DSC	-28	-35
Specific gravity (g/cm3)	1.57	1.52

# Vamac<sup>®</sup> for EV/HEV Battery Cable

## Why Vamac<sup>®</sup>?

### Improved Durability

- Operating at **temperatures** generated by high voltage electric current
- Outstanding **chemical** resistance

### Lightweighting

- Allowing **thin wall** insulation with **smaller diameters**

### Fast and Easy Assembly

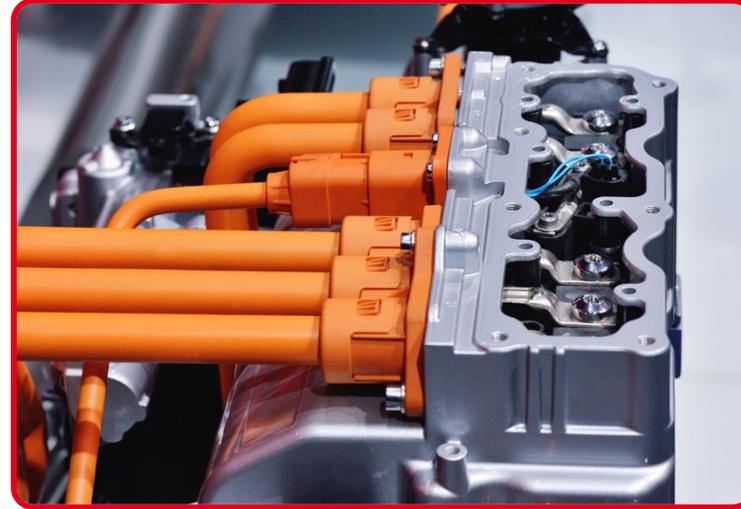
- Enabling easier installation around small radius in **confined spaces**

### Safe and Sustainable

- **Halogen free**, flame retardant

### Cost Efficiency

- **Thinner wall** design



### Vamac<sup>®</sup> Features

- High temperature resistance, 150°C 3000h (Class D ISO 6722)
- Outstanding flexibility at low temperature
- Excellent abrasion resistance
- Resistant to battery acids, oils, brake fluids, window washer and cleaning fluids, salt water
- Halogen free, compatibility with flame-retardant fillers
- Ease of crosslinking with electrons

**Key Grades: Vamac<sup>®</sup> Ultra DX / Hytrel<sup>®</sup> 4056**

# Vamac<sup>®</sup> for Rolling Stock

## Why Vamac<sup>®</sup>?

### Durability

- Outstanding **chemical** resistance

### Lightweighting

- Allowing **thin wall** insulation with **smaller diameters**

### Fast & Easy Assembly

- Enabling easier installation around small radius in **confined spaces**

### Safe & Sustainable

- **Halogen free**, flame retardant
- **High fire retardancy**



### Vamac<sup>®</sup> Features

- Outstanding flexibility at low temperature
- Excellent abrasion resistance
- Resistant to battery acids, oils, brake fluids, window washer and cleaning fluids, salt water
- Halogen free, compatibility with flame-retardant fillers

**Key Grades: Vamac<sup>®</sup> Ultra DX / Hytrel<sup>®</sup> 4056**

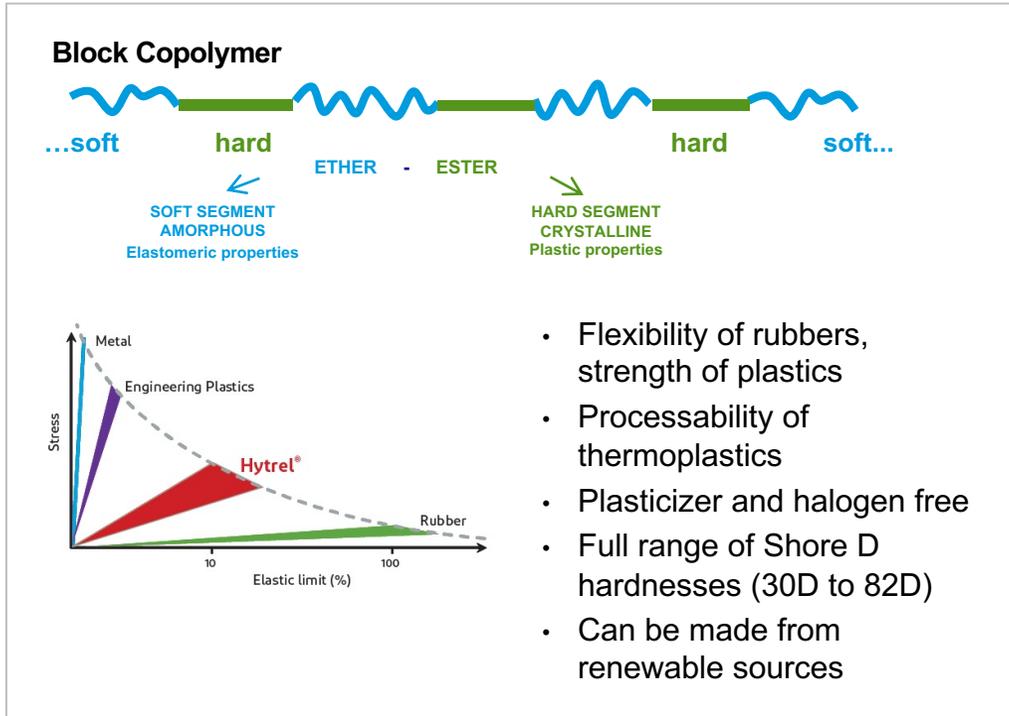
# Hytrel®

Flexible Thermoplastic Solutions for Wire & Cable Insulation and Jacketing



# Hytrel® – TPC-ET Thermoplastic Elastomer

## Hytrel®, Versatile, Resilient, Durable Copolyester



## Hytrel® Key Properties for Wire & Cable

- Flexibility and resilience
- Broad service temperature (-40°C to 150°C)
- Excellent low temp flexibility and toughness
- Excellent flexural fatigue resistance
- Resistant to tearing and flex cut growth
- Excellent creep resistance
- Highly resistant to hydrocarbons and other fluids
- Good noise and vibration dampening at low temperatures

Materials	Flex	Abrasion	FR	Oil	Fuels	Brake Fluid	Acid/Alkalines
FEP	+	++	++	++	++	++	++
SR-V	+++	+	+	+	+	+	-
PTFE	+	++	++	++	++	++	++
<b>HYTREL®</b>	<b>++</b>	<b>+</b>	<b>+/-<sup>X</sup></b>	<b>++</b>	<b>++</b>	<b>+</b>	<b>+</b>
TPE-U	++	++	-	++	++	+	+
PE-X	+	+	+	+	+	-	+
PO-X	+	+	+	+	+	+	+
EVA-X	+	-	-	+	-	-	-
PP	+	+	--	+	+	-	+
PVC-P	+	+	+	+	+	-	+
PA	+	++	-	++	++	+	+
PE	+	+	--	-	+/- <sup>X</sup>	--	+
PVC	+	+	+	+	+	-	+

<sup>X</sup> Application dependent



# Benefits of Hytrel® for Wire & Cable

## Durable

- **Strength and flexibility** without plasticizers, even at **low T°**
- Abrasion resistance
- Excellent **heat and chemical resistance**
- Outstanding **flex fatigue and cut-growth resistance**

## Fast and Easy Assembly

- Outstanding flexibility
- Specific grades modified for easy peel, no tools needed for confectioning and easy installation

## Lightweighting

- Thinner wall through excellent mechanics and flex fatigue

## Safe and Sustainable

- Halogen free, flame retardant possible
- Non-migratory (no plasticizer)
- Renewably sourced availability
- RoHS compliant

## Cost Efficiency

- Easy processing
- Thinner wall possibilities

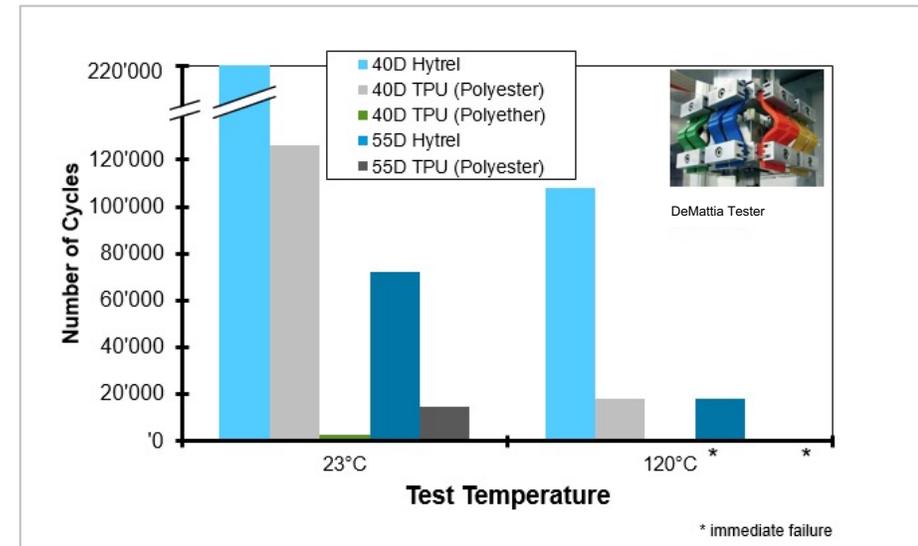


## Main Applications Include:

- Optical fiber cables
- Robotics
- EV infrastructure
- Transportation cables
- Renewable energy
- Automotive high temperature cables

## Why Select Hytrel® vs. TPU for Cable Design?

- Better low temperature flexibility
- Better snapback performance
- Improved flex fatigue and cut-growth resistance
- Better creep resistance
- Higher continuous use temperature capabilities



# Hytrel® for Optical Fiber Cables

## Tight Buffer Solutions

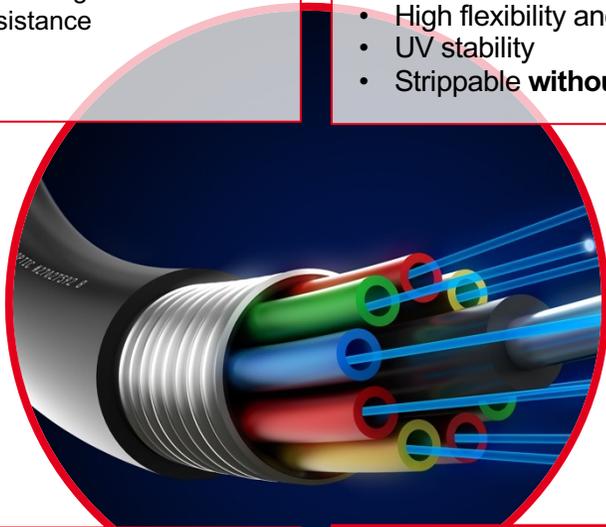
### Hytrel® 5556, 6356, 7246, or 8238

- Flexibility and strength
- Good tear resistance
- Low CLTE

## Easy Strippable Solution

### Hytrel® 8351 for Mini Loose Tubes

- Low processing temperature
- High flexibility and dampening
- UV stability
- Strippable **without tools**



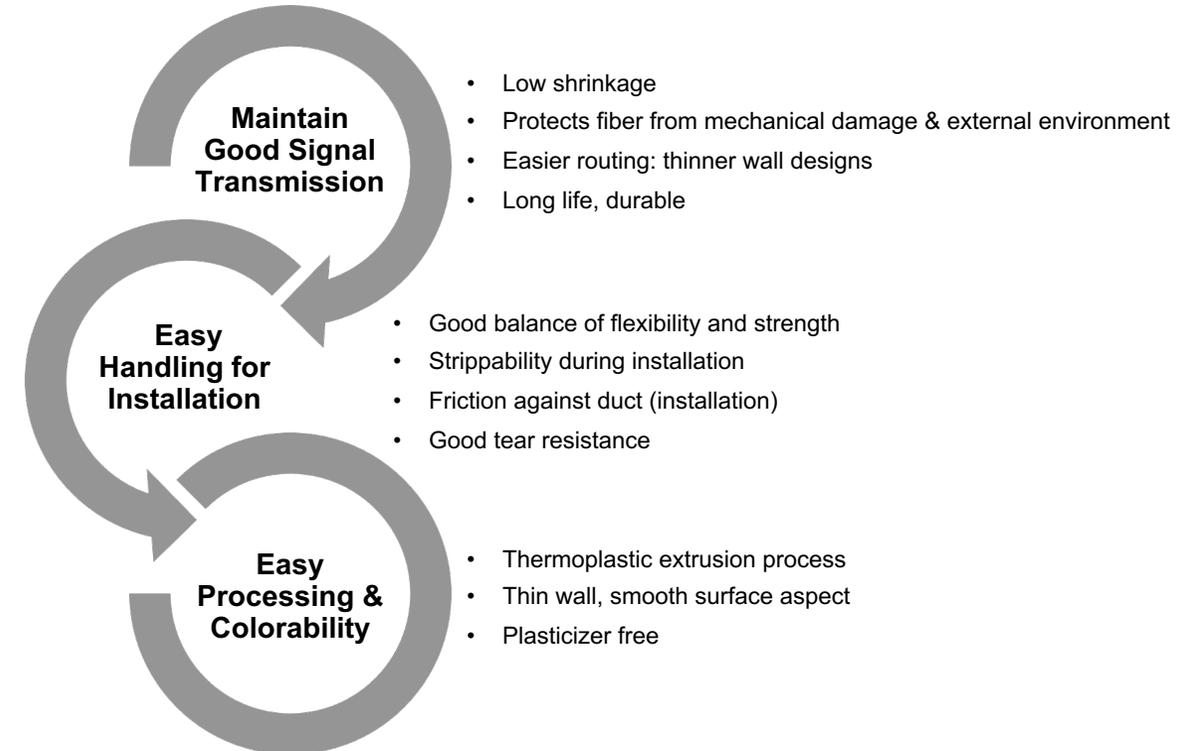
## Alternative to PA12

### Hytrel® 8238

## Translucent Applications

### Hytrel® HTR6108

## Benefits of Hytrel® for Tight Buffer and Mini Loose Tubes



## Long Lasting Solutions vs. PVC or Polyolefin-based Materials:

- Stronger resistance to heat exposure
- Better flexibility, especially at low temperatures

# Hytrel® for EV Infrastructure Cables

## Hytrel® Benefits for Signal Core Insulation

### Durability

- Excellent abrasion resistance
- Hydrolysis resistance
- Flex fatigue resistance
- Coilable

### Safe and Sustainable

- Halogen free

### Cost Efficiency

- Excellent processability



# Hytrel<sup>®</sup> for Dynamic Cables – Offshore Wind and Marine Energy

## Hytrel<sup>®</sup> Benefits for Insulation

### Durability

- Outstanding flex fatigue over time in a constantly moving environment
- Resistance to salty water
- Good dielectric strength

### Safe and Sustainable

- Halogen free

### Cost Efficiency

- Processability
- Excellent performance without crosslinking process



# Hytrel<sup>®</sup> for Robotics & Automation

## Hytrel<sup>®</sup> Benefits for Drag Chain Cables

### Durability

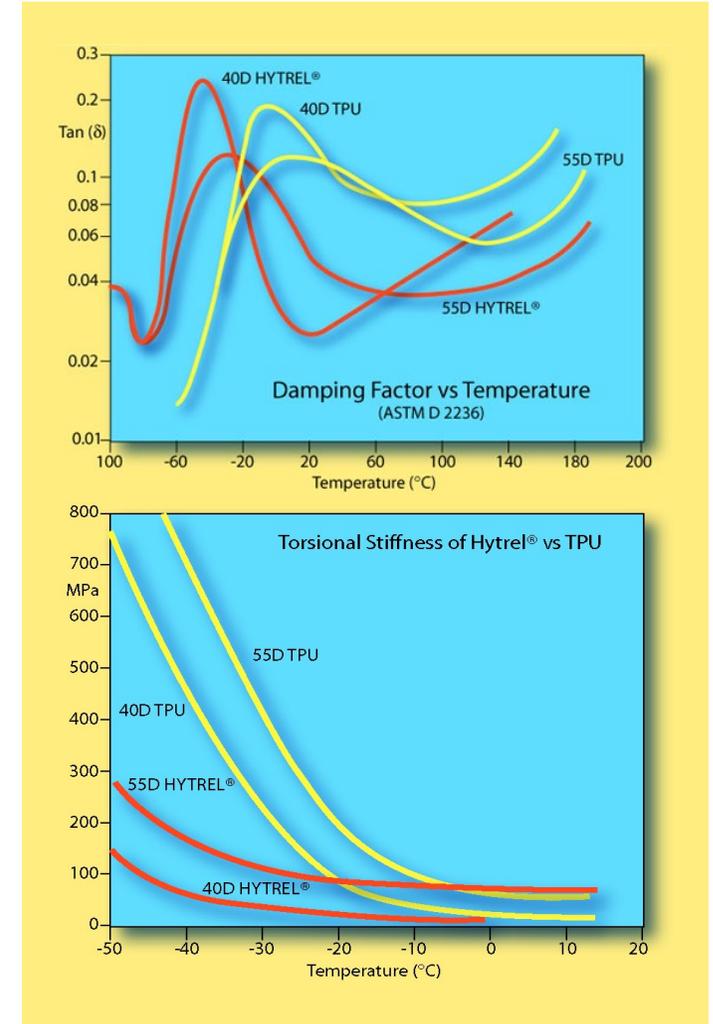
- Outstanding flex fatigue resistance
- Stable electrical properties
- Hydrolysis, chemical, and oil resistance
- High continuous use temperature capabilities

### Safe and Sustainable

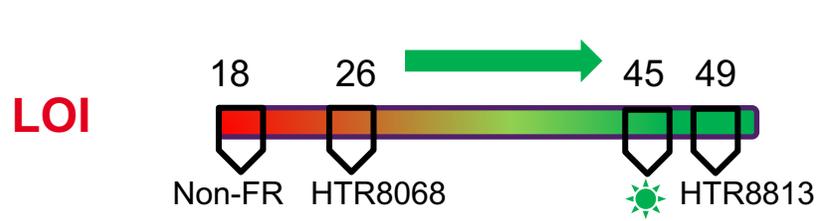
- Halogen free, low smoke
- Plasticizer free

### Cost Efficiency

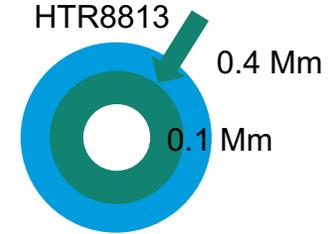
- Easy processability



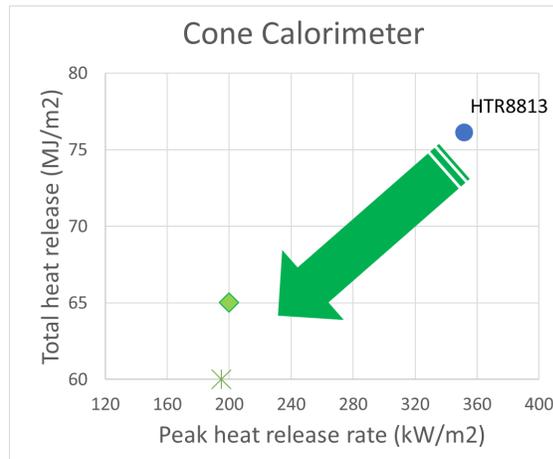
# New Thermoplastic Elastomer NHFR Developments Addressing Wire & Cable



**Thin Wall**

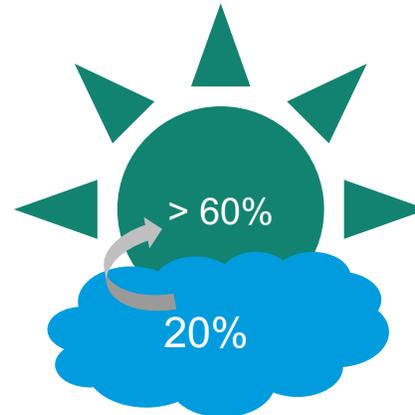


## Heat Release

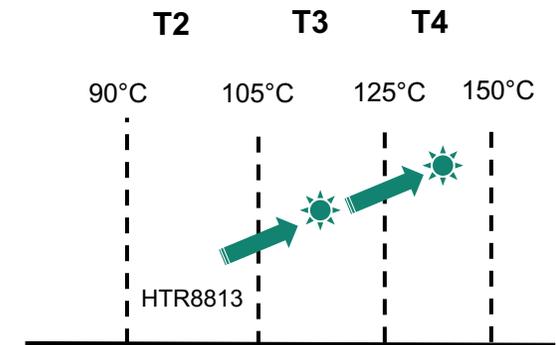


## Smoke

Min. light transmittance



## High Temperature



# Multibase™

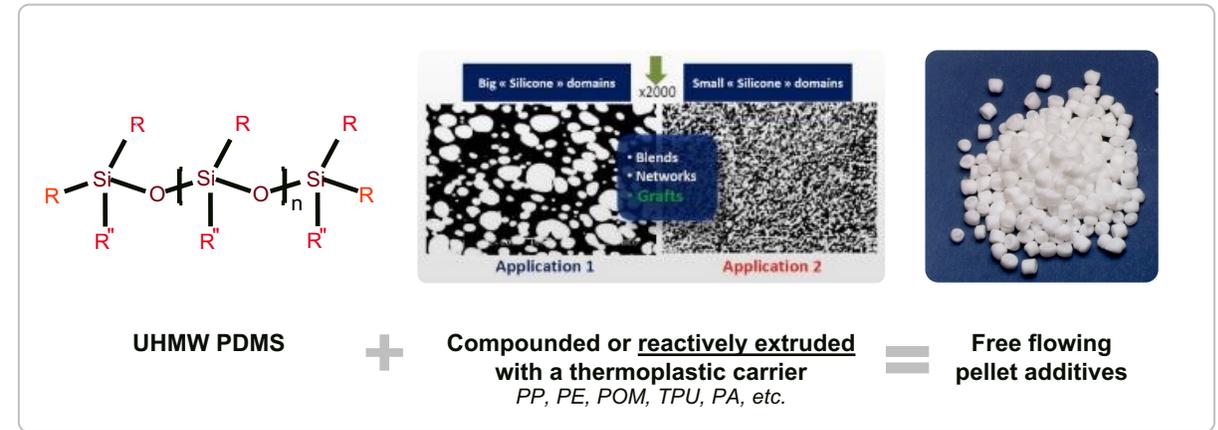
Additive Solutions for Wire & Cable Halogen-free, Flame-retardant Compounds



# Multibase™ Silicone Masterbatches

## What are Silicone Masterbatches?

- Blend of a high amount of **ultra high molecular weight polydimethyl siloxane (UHMW PDMS)** and **polymer carrier**
- Can be either a **dispersion** of silicone or **copolymer** silicone in a thermoplastic
- SiMB are **free flowing pellets**, and can be used in any conventional thermoplastic transformation process and feeders
- Typical additive use rate: 1-3%



## Benefits for Thermoplastics

**EXTEND**

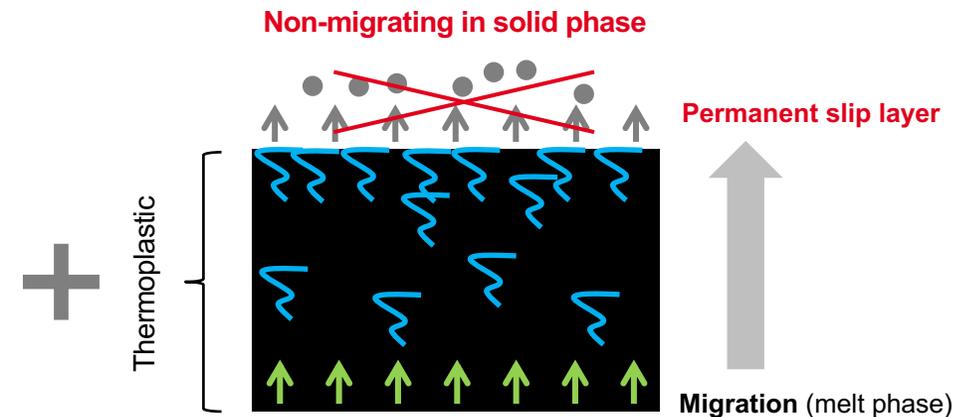
**Tribology modification**  
 Improve scratch and mar  
 Improve lubricity  
 Reduce squeaking noise

**ENHANCE**

**Processing performance:**  
 Help increase throughput  
 Reduce energy demand  
 Better mold release

**REINFORCE**

Help customers reinforce mechanical properties, filler incorporation, and compatibility of formulations



Silicones have a very good stability over time, temperature, and radiations which makes them suitable for durable performance requirements.

# Multibase™ Silicone Masterbatches for Wire & Cable NHFR Compounds

High levels of FR filler loading (>60% ATH or MDH) strongly impact polymer rheology, leading to processing issues during cable extrusion: Low output, melt fracture, rough cable surface

**Addition of Multibase™ silicone masterbatches in polyolefin NHFR compounds helps re-establish stable rheological conditions and resolves process issues.**

## During Cable Extrusion Process

- Optimized rheological conditions
- Higher throughput
- Lower energy consumption, reduced torque
- Die pressure reduction

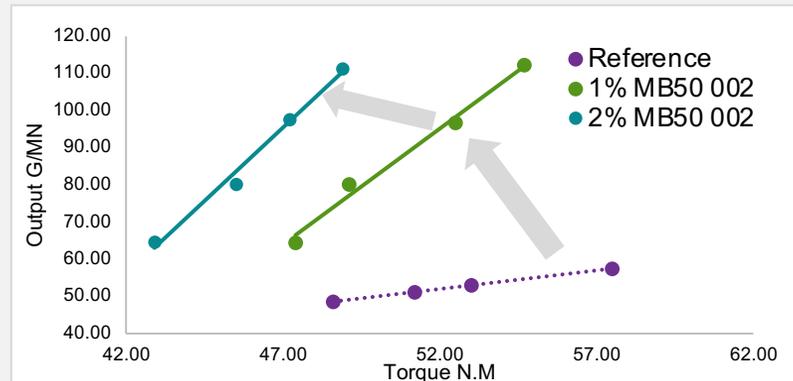
## On the Cable

- Smooth cable surface (reduced melt fracture)
- Better cable performance due to good filler dispersion
- Low order of toxicity (no toxic fumes while burning)
- No exudation of additive

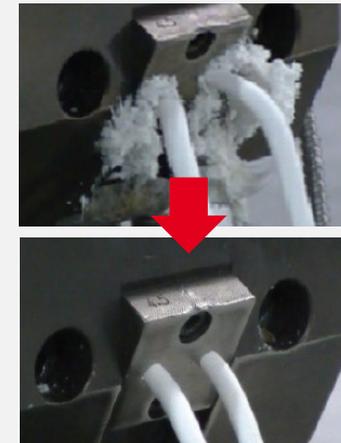
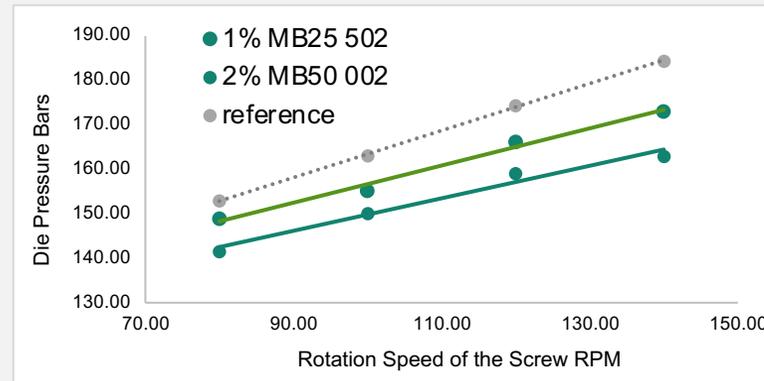
HFFR Compound Type	Solution
PE-based HFFR	MB50-002
PP-based HFFR compounds	MB50-001
EVA-based HFFR compounds	MB50-320

1-1.5% use rate

**Multibase™ SiMB Reduces Torque at Given Throughput While Improving Surface Aspect (Reduce Shark Skin)**



**Multibase™ SiMB Allows Increasing Screw Speed and Reduces Die Pressure**



# Conclusions

# Solutions for Optical Fiber Cables

Materials for Improved Design Flexibility, Thin Wall Extrusion, Temperature Resistance, Easy Handling and Installation

## Tight Buffer

Hytel® Grade	Density gr/cm <sup>3</sup>	MFR (g/10min, 2k16)	Flex Mod (Mpa)	Hardness Shore D	Stress@ Break (Mpa)	Strain@ Break (%)
5556	1.19	7.8 @ 220C	190	55	40	>300
5555HS	1.19	8.5 @ 220C	195	55	35	>300
6356	1.22	9 @ 230C	290	63	43	>300
7246	1.26	13 @ 240C	550	68	50	>300
8238	1.28	12.5 @ 240C	1150	76	46	>300
HTR6108(*)	1.25	5.1 @ 190C	170	61	32	290

(\*) Translucent applications

## Mini Loose Tubes

Hytel® Grade	Density gr/cm <sup>3</sup>	MFR (g/10min, 2k16)	Flex Mod (Mpa)	Hardness Shore D	Stress@ Break (Mpa)	Strain@ Break (%)
HTR8351(*)	1.15	10@190C	21	24	9	210
G3548	1.15	10@190C	25	35	10	190

(\*) Easy strip-ability for installation without tools

## Loose Tube

Crastin® Grade	Density gr/cm <sup>3</sup>	MFR (g/10min, 2k16)	Flex Modulus (Mpa)	Strain@ Break (%)
6129	1.32	10@250C	2400	>200
6130	1.30	16@250C	2400	>200
S600F10	1.30	11@250C	2400	>200
ST830FRUV (*)	1.37	3@250C (3Kg)	2100	>50

(\*) Super tough, UV stabilized, FR grade (UL94V-0@0.85mm)

## Outer Jacket

Grades	Density gr/cm <sup>3</sup>	Flex Mod (Mpa)	Hardness Shore D	Stress@ Break (Mpa)	Strain@ Break (%)
Hytel® HTR8813 (*)	1.23	370	58	11	150
Zytel® LC6200(**)	1	1000	69	35	>150

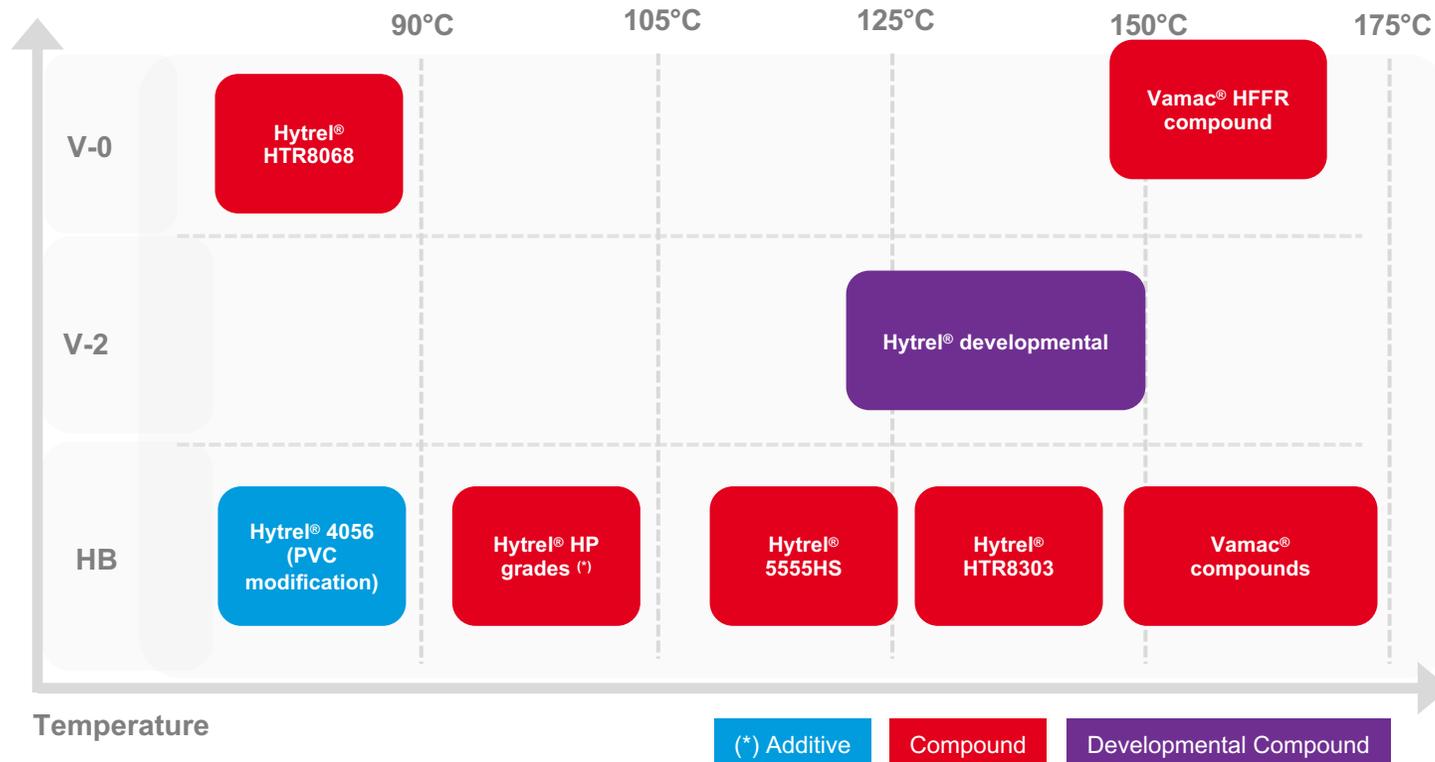
(\*) **NHFR** grade, V-0 @1.5mm, LOI 49%

(\*\*) PA612-HI

# Solutions for Automotive Cables

## Material Solutions for Ultra-thin Wall and Lightweight Cables with Excellent Thermal and Hydrolysis Management

Improving mechanical properties, as well as fatigue, thermal, and hydrolysis resistance for EV and EV battery cables



- Criteria: Time to reach 50% elongation at break retention
  - Air oven aging data measured in injection molded specimen
- (\*) High Performance grades: Hytrel® 4056, Hytrel® 5556, Hytrel® 6356

# Solutions for Cable Compounds

## Enhancing Your Cable Formulations with DuPont Specialty Additive and Resin Technologies

### **Multibase™**

Improving processability and flame retardancy of HFFR compounds

Grade	Description
MB50-002	PE-based silicone masterbatch
MB50-001	PP-based silicone masterbatch
MB50-320	EVA-based silicone masterbatch

### **Hytrel®**

Sustainable and plasticizer-free solution for PVC compounds

Grade	Description
Hytrel® 4056	Pellet
Hytrel® 4056P	Powder

### **Hytrel®**

Property improvement of your Hytrel® compound

Grade	Description
Hytrel® 21UV	UV light stabilizer concentrate
Hytrel® 30HS	Heat stabilizer concentrate
Hytrel® 40CB	Concentrate of a fine particle size carbon black
Hytrel® 60LW	Lubricant concentrate

### **Vamac®**

Formulation of best combination of oil-resistant, low temperature, flexible compounds

Grade	Description
VAMAC® Ultra DX	High viscosity, peroxide cured, AEM dipolymer
VAMAC® VMX2144	Dipolymer with lower methyl acrylate (MA) content



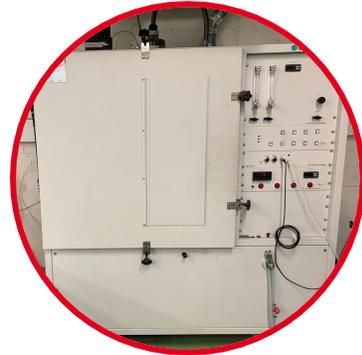
# Global Wire & Cable Capabilities



Prototype Cable  
Extrusion Line



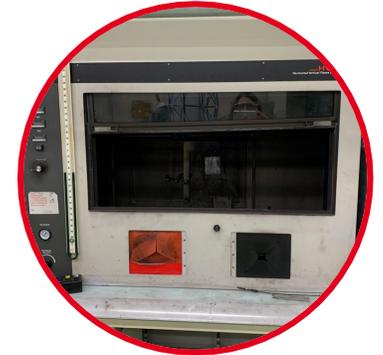
Cone Calorimeter  
ISO 5660



NBS Smoke Chamber  
ASTM E662,  
ISO 5659, ABD 0031



VW-1 Vertical FR Cable  
Test  
UL 1581



UL Cabinet  
UL94



Hot Salt Water  
Resistance Test



Dielectric Test (1kV/1min)



PCT Hydrolysis Tester



Air Oven Aging Lab



Environmental Aging

# Working with Us

Whether You are Looking at Innovative Solutions for Cable Insulation or Jacketing, or Developing Your Formulation...

## For Your Cable Designs

### Testing and Evaluation for Material Development and Customer Support

- Compound characterization capabilities
- Cable extrusion, specific cable tests
- Material analysis on final cable

## Our People

### Global Team, Wide Range of Expertise From Additives to Cables

- Local application development and commercial team
- Experienced formulation scientists and technicians
- Extrusion specialists for customer support

## How We Work



Communicate.



Collaborate.



Create.

## For Your Compound Developments

### Formulation Support with Our Ingredient Solutions

- Formulation support (recommendations for compatible raw materials, etc.)
- Analytical testing
- Application testing

## Our Planet

### Duty to Provide Innovative and Sustainable Products to Society

- Environmentally-friendly footprint (WEE, ROHS, REACH)
- No or low halogen content in our developments
- Solutions for lightweighting
- Renewably-sourced solutions (Hytrel® RS)

# Sustainability

Advancing toward carbon neutrality by 2050 and enabling a circular economy



## innovate now

- Engendering sustainability into all aspect of development cycle (LCA focus, new products)
- Improving circular economy options for our products (pilots, external leadership)
- Innovate with a consideration for green chemistry principles



## protect now

- Move to carbon neutral (carbon footprint reduction w/ increasing renewable energy)
- Reducing water, waste and energy usage: Operation Clean Sweep; Bold Energy

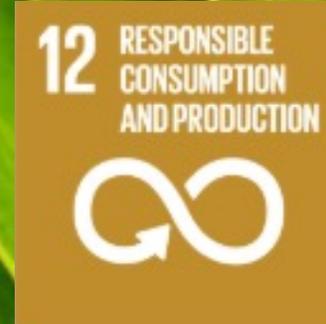


## empower now

- Enable the health and wellbeing of employees and impact the communities we live in
- Advance diversity and focus on women and minority parity in leadership



# SUSTAINABLE DEVELOPMENT GOALS



# Connect with Us

## Mobility & Materials

Transforming Industries and Improving Lives Through Material Science

### Visit

Material Data Center  
for technical data sheets,  
comparisons, and more

[DuPont.MaterialDataCenter.com](http://DuPont.MaterialDataCenter.com)

### Learn More

[DuPont.com/mobility](http://DuPont.com/mobility)



[LinkedIn.com/Company/  
DuPont-Mobility/](https://www.linkedin.com/company/duPont-Mobility/)



[@DuPont\\_Mobility](https://twitter.com/DuPont_Mobility)



© 2021 DuPont. All rights reserved. DuPont™, the DuPont Oval Logo, and all trademarks and service marks denoted with ™, SM or ® are owned by affiliates of DuPont de Nemours, Inc. unless otherwise noted. Nothing contained herein shall be construed as a representation that any recommendations, use or resale of the product or process described herein is permitted and complies with the rules or regulations of any countries, regions, localities, etc., or does not infringe upon patents or other intellectual property rights of third parties.

The information provided herein is based on data DuPont believes to be reliable, to the best of its knowledge and is provided at the request of and without charge to our customers. Accordingly, DuPont does not guarantee or warrant such information and assumes no liability for its use. If this product literature is translated, the original English version will control and DuPont hereby disclaims responsibility for any errors caused by translation. This document is subject to change without further notice.