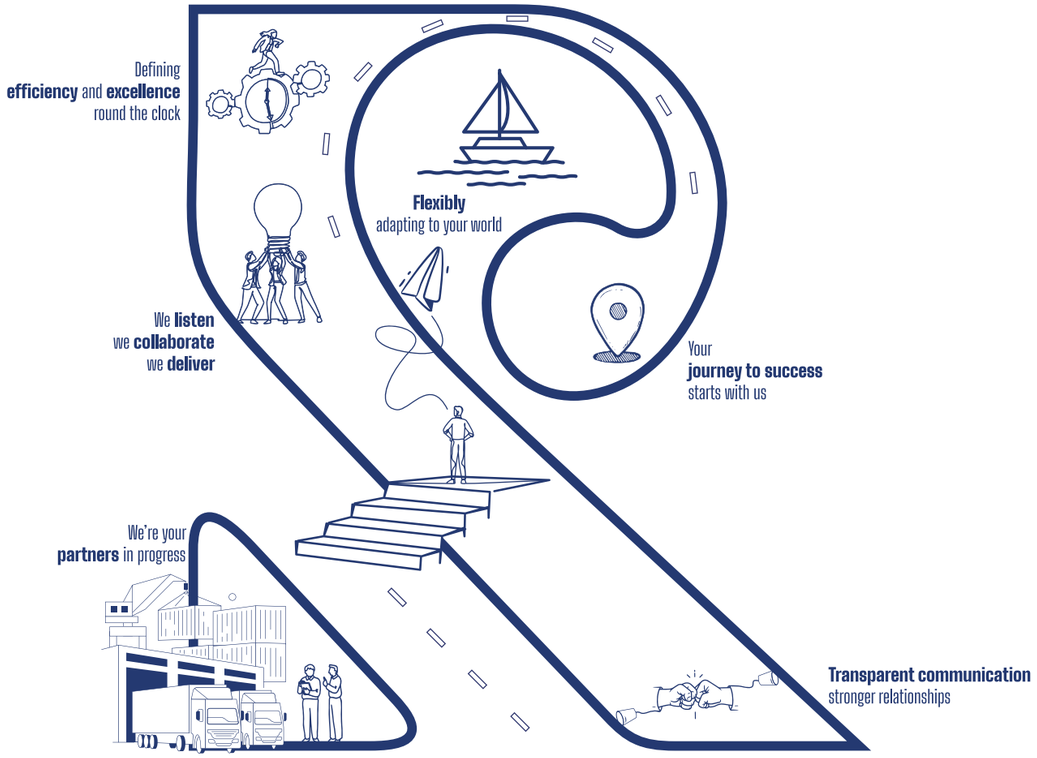


RAJSHILA®

RAJSHILA®

CONTENTS

Company Profile	1
Strength	2
About us	3
Clients	4
Products	5
Associates	7
Madhu Silica Pvt. Ltd.	9
Himadri Speciality Chemicals Ltd.	15
Nouryon Chemicals India Private Limited	23
Reliance Industries Ltd.	31
Versalis Singapore Pte Ltd.	33
Wacker Metroark Chemicals Pvt. Ltd.	39
Hunan Minhe Chemical Industrial Co. Ltd.	40
LG Chem Ltd.	41
Huntsman Solutions India Pvt. Ltd.	43
Techno Wax Chem Pvt. Ltd.	45
Hoshine Silicon Industry Co. Ltd.	53
Kuraray India Private Limited	55
Hanwha TotalEnergies Petrochemical Co. Ltd.	61
Oriental Carbon & Chemicals Ltd.	63
Ningxia Boyuan Rubber Co. Ltd.	65
Zhenjiang Wholemark Fine Chemicals Co. Ltd.	66
Payal Polyplast Pvt Ltd.	67
Rubaloy	69
ITW India Private Limited	71
Finorchem Ltd.	73
Ritesh International Ltd.	76
Henghe Materials & Science Tech Co. Ltd.	77
Dynasol Ltd.	79
VVTI Pigments Pvt. Ltd.	80
Certificate	81
Contact Us	82

Beyond materials building a **BETTER WORLD**

We, at Rajshila, see ourselves as the architects of possibility. For over 40 years, Rajshila has been the unseen force powering industries with its wide spectrum of elastomers, polymers and petrochemical solutions. Our products drive industries like automotive, footwear, wires & cables and many more. Customer gratification lies at the core of our philosophy, reflected in quality products, technical expertise and seamless single-window solutions that simplify complex processes.

At Rajshila, we don't just supply materials, we shape industries. Backed by deep technical expertise and a vast product portfolio, we turn every query into an opportunity for growth. From strategically planned inventories to a global network that senses market shifts before they arrive, we keep your operations running with certainty. With Rajshila, you gain more than materials; you gain an edge the world can't ignore.

We are a legacy woven from the dreams of three generations. Today, we stand as a force redefining industries. For us, trust isn't just built, it's nurtured with quality, care and an unbreakable promise to those we serve.

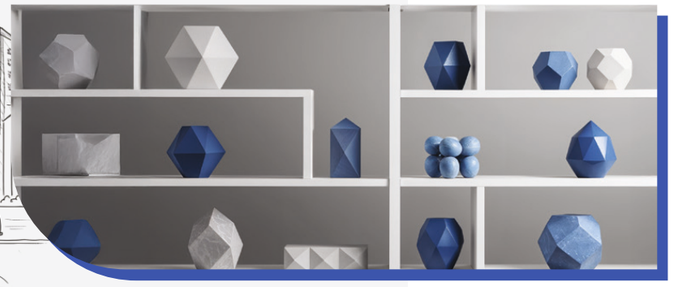
Our channel partners are an extension of the Rajshila family. Built on trust, mutual growth, and seamless information sharing, our relationships go beyond transactions. We cultivate long-term collaborations rooted in deep understanding, enabling strategic decisions together. With exemplary technical support and robust logistics, we ensure our partners are never held back by material challenges.

We are the bridge between vision and reality, empowering our partners to achieve remarkable feats within the ever-evolving landscape of elastomers.

Wide Network

Adequate Stock Levels

End Consumer Supply



Rich Product Mix

Technical Support

Rajshila is a single window for your business requirements. Our broad range of products has catered to a wide range of the world's major industries and the entire spectrum of clientele.

Products

With a portfolio of over 400 specialised raw materials, Rajshila serves the needs of 30+ industries under one roof. Our range includes premium Rubbers and Polymers that build durability, Fillers and Activators that add strength and Colorants that bring precision in shade and consistency. We offer Plasticizers and Tackifying Agents for superior adhesion, while our Peroxide and Sulfur Systems, Silicone Emulsions, Pharma Grades, Mold Release Agents and Mold Cleaners ensure seamless production processes.

From Specialty Chemicals and Processing Aids to Specialty Waxes, Blowing Agents, Dry Bonding Systems and PU Systems, every product is curated to enhance manufacturing performance at every stage.

400+ PRODUCTS

40+ YEARS OF EXPERIENCE

30+ INDUSTRIES

Warehouse Facility

Minimum Lead Time

Purpose-built CRM

Quality Assurance

Our clientele

includes the notable and eminent lot ranging from

- Automotive Components
- Footwear
- Wires & Cables
- Hose Pipe
- Conveyor Belt
- Rice Rolls
- Printing Rolls
- Railway Pads
- Masterbatch & Compounds
- Silicon Rubber Insulators
- Printing Inks
- Anti-Vibration Pads
- Sports Goods
- PU Foam
- Agriculture
- Cosmetics
- Insulators
- Animal Mats
- FMCG
- Rubber Mats
- Tyre
- Adhesives
- Sound-Damping Coatings
- Paint
- Modeling Clay
- Synthetic Cork
- Pharmaceuticals
- Surgical Goods
- Butyl Tubes
- Construction
- V-Belt
- Genuine/Artificial Leather

NATURAL & SYNTHETIC RUBBERS, POLYMERS

- RMA
- SBR
- PBR
- NBR
- SSBR
- EPDM
- Butyl Rubber
- Chlorobutyl Rubber
- Isoprene Rubber
- Chloroprene Rubber
- POE
- PVC Resin
- CSM Rubber
- Silicone Rubber
- Silicone Gum
- SBS (Dry & Transparent)
- EVA 18%/ 26%/ 28%
- EVA 33018/ 33045
- EVA 40055
- SEBS
- SEPS
- SEEPS

FILLERS, ACTIVATORS, COLOURANTS

- Precipitated Silica
- Carbon Black
- Speciality Carbon Black
- Zinc Oxide
- Calcium Carbonate
- Stearic Acid
- Zinc Stearate
- DEG
- PEG 4000
- Reclaim Rubber
- Magnesium Oxide
- Titanium Dioxide
- Paraffin Wax
- M.C. Wax
- Carbon Black (Masterbatch)

PLASTICIZERS AND TACKIFYING AGENTS

- DOP
- DBP
- DINP
- DINA
- DOA
- Petroleum Resin (C5/C9)
- DOTP
- CPW
- TOTM
- Petroleum Jelly
- Wood Rosin

CURATIVES (PEROXIDE SYSTEM)

- Perkadox BC-FF (DCP 99%)
- Perkadox BC-40
- Perkadox 14-40 B-PD (Non Smell Peroxide)
- Perkadox PD50 Paste (Silicone Based Peroxide)
- Perkadox 14S-FL
- Trigonox 101 (Liquid Peroxide)
- Trigonox 29-40
- Trigonox 301
- Trigonox B

CURING BOOSTER

- TAIC E-50%
- TAIC P-70%
- TAIC S-100%
- TMPTMA (Fast Curing)

CURATIVES (SULPHUR SYSTEM)

- Sulphur
- Insoluble Sulphur
- S-80 (Masterbatch)
- MBT
- MBTS
- CBS
- TBBS
- TMT
- DPG
- ZDEC
- ZMBT
- Mercure F
- TMQ
- SP
- Mertard PVI
- 6PPD
- Eflow DBD 40
- Elastotack CH
- Mernox 445
- Mernox CPL

PU SYSTEMS

CASUAL FOOTWEAR

- DALTOPED AF 55855
- DALTOPED FF 55750
- DALTOPED AF 35443

UNIT SOLE

- DALTOPED AF 45100
- DALTOPED AF 65100
- DALTOPED AF 38500

DOUBLE DENSITY FOOTWEAR

- DALTOPED AF 33100
- DALTOPED AF 32802

FOOTBED

- DALTOPED AF 32100

TPU OUTSOLE

- AVALON 65 AK

SOFT & SPORTS FOOTWEAR

- DALTOPED AF 40251

SAFETY FOOTWEAR

- DALTOPED FA 66860
- DALTOPED FA 54806
- DALTOPED FA 16808

SPECIALITY CHEMICALS

- NA22
- BHT
- SI69
- DPTT
- OCD
- DTDM

PROCESSING AIDS AND SPECIALITY WAXES

- ZF 16
- ZF 222
- ZF 42
- PA50P
- ZF 212
- Rubwax 1244
- Phenolic Resin
- PA44
- Homogeniser
- Double Peak Waxes
- MFI Improver
- PA70
- High Temperature Resistant Waxes
- Microcrystalline Wax (Single & Double Peak)

BLOWING AGENTS

PHYSICAL BLOWING AGENT (MICROSPHERES)

DRY UNEXPANDED

- Expancel 938 DU 120
- Expancel 930 DU 120
- Expancel 909 DU 80
- Expancel 031 DU 40
- Expancel 920 DU 40
- Expancel WB 500

WET UNEXPANDED

- Expancel 031 WUF 40
- Expancel 007 WU 40
- Expancel 007 WUF 40
- Expancel 053 WU 40
- Expancel 043 WU 80
- Expancel 920 WUF 40
- Expancel 909 WU 80

DRY EXPANDED

- Expancel 920 DET 40 d25
- Expancel 920 DET 20 d40
- Expancel 920 DE 40 d30
- Expancel 920 DE 80 d30
- Expancel HP92 DET 80 d45
- Expancel 043 DET 80 d20

WET EXPANDED

- Expancel 920 WE 40 d24
- Expancel 921 WE 40 d24
- Expancel 044 WE 20 d36

CHEMICAL BLOWING AGENT (ADCL)

- RJ-AC 50

DRY BONDING SYSTEM

- Resorcinol Dispersion
- Resorcinol Resin
- HMMM Resin & Dispersions
- HMT Dispersions
- Super Tackifier Resin
- Tackifier Resin
- Reinforcing Phenolic Resin
- Cut & Chipping Resistance
- Resorcinol Dipping Resin

SILICONE EMULSION, MOLD RELEASE AGENT AND MOLD CLEANERS

- Silicone HS
- Silicone E 74M
- Silicone E41 M
- Silicone E83
- Silicone E40
- Silicone Fluid 350
- Silicone Fluid 1000
- Silicone Gum
- Liquid Anti Tack
- Mold Cleaner
- F-22 (Mold Cleaner)
- W123 (Anti Tack Agent)
- Mold Release Agent
- Akvarel 315S
- Akvarel 450

PHARMA GRADES

- Pharmalene FC20 PH
- Pharmalene FL35 PH

Associates

MADHU SILICA
Precipitated Silica

Himadri
Himadri Speciality Chemicals Ltd.
Carbon Black

Nouryon
DCP (Organic Peroxides)
Expancel (Blowing Agent)

WACKER
Wacker Metro Ark Chemicals Pvt. Ltd.
Silicone Emulsion & Oil
Geniplast Gum & Pelets

FARIDA 方锐达
Hunan Minhe Chemical Co. Ltd.
TAIC, TMPTMA

LG CHEM
NBR & SBS
EVA & POE

合盛硅业 HOSHINE SILICON
HOSHINE SILICONE INDUSTRY Co. Ltd.
Silicone Rubber

kuraray
Possible starts here
SEBS, SEPS & SEEPS

Hanwha TotalEnergies
EVA

Payal Group
Plasticizers
(DOP, DBP, DOA & DINP)

ITW
ITW India Pvt. Ltd.
Water Based
Mould Release Agent
Mould Cleaning Agent
Mould Anti-tack Agent

FINORCHEM
Accelerators,
Antioxidants,
Antiozonant & Peptizer

Dynasol
SBS, SEBS & SIS

CENTURION
Reclaim Rubber

UPPER INDIA GROUP OF COMPANIES
Zinc Oxide

Relflex™ ELASTOMERS
Stretching Limits
Reliance Industries Ltd.
SBR & PBR

versalis
EPDM, SSBR,
NBR, SEBS & EVA

LVE
MULTIPLIED PERFORMANCE
EPDM & SSBR

HUNTSMAN
Enriching lives through innovation
PU SYSTEMS

Reliance Sibur
Elastomers Private Limited
A partnership of excellence
Butyl Rubber

TWC
TECHNO WAXCHEM RAJSHA CHEMICALS
Dry Bonding Agent
Super Tackifier Resin
Homogenising Agent &
Process Additives

OCCL
Oriental Carbon and Chemical Ltd.
Insoluble Sulphur

宁夏博远橡胶有限公司
NINGXIA BOYUAN RUBBER CO., LTD.
CSM Rubber

WHOLEMARK
Zhenjiang Wholemark Fine Chemicals Co. Ltd
SI 69, OCD, BHT
DPTT, NA22 & Other
Speciality Chemicals

Godrej
Godrej Industries Limited.
Stearic Acid

RITESH INTERNATIONAL LTD. SINCE 1981
Stearic Acid

HENGHE
HENGHE PETROCHEMICALS
Hydrocarbon Resin
(C9 and C5 Resin)

RUBALOY®
NBR-PVC
NBR & PVC

V.V. Titanium Pigments Pvt. Ltd.
Titanium Dioxide
(Anatase Grade)

VISWAAT
Viswaat Chemicals Ltd.
PEG 4000

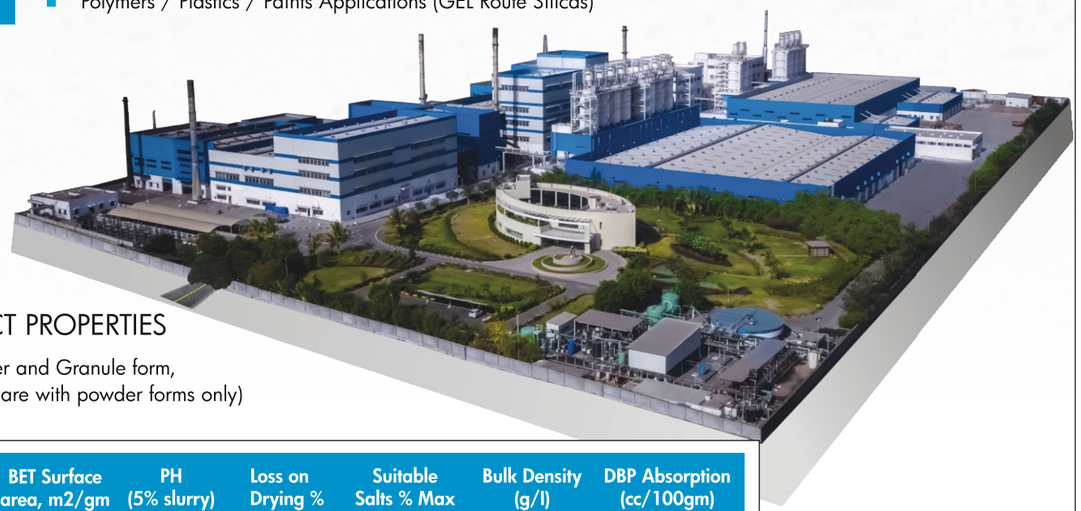
MADHU SILICA

MADHU SILICA PVT. LTD. (MSPL) is the largest manufacturer of **Precipitated Silicas** in India and 4" largest (*) in the world. Our more than 50 grades of Precipitated Silicas today find usage in end applications in various industries. The company has 4 established plants capable of manufacturing 2,00,000 MT / annum. And we have planned expansion of another 2,70,000 MT / annum by H1/2019. Apart from a large Indian market, the company exports their products to all over the world.

The company is ISO 9001:2008, ISO 14001:2004, OHSAS 18007:2007, ISO 22000:2005, FAMI-QS, FDA, Certified and Registered for Reach.

OUR MARKET & SILICA GRADES

- Tyre / Rubber / Footwear / Misc. Rubber Applications
- Oral Healthcare / Cosmetics / Pharma Applications
- Food / Feed Types
- Speciality Applications
- Polymers / Plastics / Paints Applications (GEL Route Silicas)



TYPICAL PRODUCT PROPERTIES

(Available both in Powder and Granule form, below typical properties are with powder forms only)

SILICA GRADE	BET Surface area, m2/gm	PH (5% slurry)	Loss on Drying %	Suitable Salts % Max	Bulk Density (g/l)	DBP Absorption (cc/100gm)
MFIL-200(S)	180	6.5	5.0	1.0	250	125
MFIL-200(G)	180	6.5	5.0	1.0	350	-
MFIL-200(S)DF	180	6.5	5.0	1.0	250	300
MFIL-200(P)	185	6.5	5.0	1.0	100	12
MFIL-150(S)	150	6.5	5.0	1.0	250	125
MFIL-135(S)	140	6.5	5.0	1.0	250	125
MFIL-125(S)	125	6.5	5.0	1.0	250	125
MFIL-125(S)DF	125	6.5	5.0	1.0	250	300
MFIL-100(S)	115	6.5	5.0	1.0	250	125
MFIL-200(FW)	165	6.5	5.0	1.0	250	125
MFIL-P(S) AC MILLED	190	6.5	5.0	1.0	85	12
MFIL-P(U)	190	6.5	5.0	1.0	250	110
MFIL-P(U) SPECIAL	190	6.5	5.0	1.0	250	85
MFIL-P(U) DF	190	6.5	5.0	1.0	250	300

PRECIPITATED SILICA IN POWDER & GRANULAR FORM FOR RUBBER APPLICATIONS

GRADE	FORM	CHARACTERISTICS
1. Rice, Roller, Conveyor Belts & Misc. Rubber Products		
MFIL -200(S)	Powder	▪ Super Reinforcing Properties
MFIL -200(G)	Granule	▪ Better Abrasion & Tensile Properties
MFIL -200(S)DF	Dust-Free	▪ Better Hardness & Modulus /
MFIL -200(HG)	Granule	Excellent Bonding Properties
MFIL -200(P)	Powder	
MFIL -150(S)	Powder	▪ For Cable improving Electrical Conductivity
MFIL -135(S)	Powder	▪ Imparts desired Tear, Tensile and Abrasion Properties
MFIL -125(S)	Powder	▪ Superior Dispersion with highly loadability and ease
MFIL -125(S)DF	Dust-Free	in processing
MFIL -100(S)	Powder	
2. Shoe Soles & Footwears		
MFIL -200(S)	Powder	▪ Optimum Hardness; Good abrasion resistance
MFIL -200(S)DF	Dust-Free	
MFIL -200(FW)	Powder	▪ Better Transparency
3. Battery Separators / Condoms		
MFIL -P(S)	Powder	In Battery Separators:
A/C MILLED		▪ Imparts high porosity, High puncture resistant and flexibility
		▪ Low elec. resistivity, long life, maintenance free storage batteries
		▪ In Condoms used as a striping aid
4. Carrier for actives used in Rubber Industry and other applications		
MFIL-P(U)	Powder	▪ As a carrier for liquid & active ingredient:
MFIL-P(U) Special	Powder	▪ Transforms liquids into solid form for ease in
MFIL-P(U) DF	Dust-Free	handling & precise
(Dust Free/Micro Pearl)		▪ Generates minimum dust during handling
		▪ Recommended for use in animal nutrition products.
		▪ Good anti-caking and free flow properties
5. For Silicon Rubber Applications		
MFIL-SR	Powder	▪ High purity and high transparency in conjunction with better heat ageing properties
		▪ Better reinforcing and mechanical properties

SYNTHETIC AMORPHOUS SODIUM ALUMINOSILICATES FOR PAINT AND COATING APPLICATIONS

PRODUCT CHARACTERISTICS

- Amorphous sodium aluminosilicate in powder form for use in paints and coatings as titanium dioxide (TiO2) extender.
- High excellent whiteness and brightness properties for giving desired opacity, whiteness and brightness to water based / emulsion paints for internal and external applications.
- Lower particle size and narrow particle size distribution to act as extender to titanium dioxide giving excellent opacity.
- High excellent whiteness and brightness properties for giving desired opacity, whiteness.

BENEFITS :

- Enhanced improvement in opacity and hiding properties.
- Effective light scattering material suitable for paint formulations to increase opacity or to compensate for reduced TiO_2 content.
- Improved film forming properties, enhancement in scratch and stain resistance.
- Partial replacement of TiO2 upto 25%, lowering formulation cost without loss of covering power.
- Better opacity, dispersion and anti-settling properties due to better fineness.

SYNTHETIC SODIUM ALUMINIOSILICATE GRADES

TYPICAL PRODUCT PROPERTIES

GRADE	% MOISTURE	pH (5% SLURRY)	OIL ABSORPTION cc /100gm	BULK DENSITY (g/l)	AVERAGE PARTICLE SIZE, MICRONS	% WHITENESS	APPLICATION BENEFIT
MASIL	5.0	10.0	120	270	5.0	99.0	TiO2 extender, Alkaline pH, average particle size ~5.0 microns.
MASIL - 7	5.0	7.0	120	270	5.3	99.0	TiO2 extender, Neutral pH, average particle size ~5.0 microns.
MASIL (8.0 Microns)	5.0	10.0	120	310	8.0	99.0	TiO2 extender, Alkaline pH, average particle size ~8.0 microns.
MASIL - 7 (8.0 Microns)	5.0	7.0	120	310	8.0	99.0	TiO2 extender, Neutral pH, average particle size ~8.0 microns.
MASIL - 723	5.0	7.0	90	300	5.3	99.0	TiO2 extender, Neutral pH, average particle size ~8.0 microns, with Low absorption capacity.

SYNTHETIC AMORPHOUS UNTREATED & TREATED PRECIPITATED SILICA GRADES FOR SURFACE COATING APPLICATIONS

PRODUCT CHARACTERISTICS

- Synthetic high brightness silica available in untreated & organic treated form.
- Used as matting agents for aqueous and solvent based systems.
- Organic treatment of the inert siloxane (Si-O-Si) & active silanol groups (Si-OH).
- Special manufacturing set-up in place for treated Silica.

BENEFITS

- Organically treated product provides improved smoothness and scratch resistance.
- The surface treatment coupled with lower particle size, promotes ease in incorporation & dispersibility.
- High matting efficiency & gloss reduction.
- Viscosity control & better dispersion.
- Anti-settling & anti-corrosion.
- Film flexibility and chemical resistant.
- Cost effective thickening & Thixotropic agent.
- Free flow / anti-caking agent for powder coatings.
- Products used in varying coating formulation like lacquers, polyurethane varnishes, coil coatings, wood coatings, gel coats, artificial leather coatings,foils & plastic sheet coatings etc.

UNTREATED SILICA GRADES

MFIL-HV(3.0 microns):

- Untreated Synthetic Precipitated Silica, used for Viscosity enhancement.
- High Absorption capacity, offering high Viscosity build & thixotropic properties in coatings.
- Low average particle size & narrow particle size distribution provides smooth surface finish.
- Recommended for automotive coatings, putty, primers etc.

PolySIL-MC44:

- Synthetic amorphous Silica used as matting agent in aqueous formulations, printing inks etc.
- Lower average particle size & narrow particle size distribution provides smooth surface finish.

TYPICAL PRODUCT PROPERTIES

GRADE	% MOISTURE	pH (5% SLURRY)	OIL ABSORPTION cc /100gm	BULK DENSITY (g/l)	AVERAGE PARTICLE SIZE, MICRONS	% SiO2, (ANHYDROUS BASIS)	APPLICATION BENEFIT
PolySIL - MC44	1.8	6.8	200	120	3.0	99.2	Matting agent, for aqueous coatings/ Ink formulations.
MFIL - HV (3.0 Microns)	3.5	6.5	310	55	3.0	98.8	Offers high Viscosity build/ Thixotropic properties & smooth surface in coatings

ORGANIC TREATED SILICA GRADES

- PolySIL-MCT4
- PolySIL-MCT6
- PolySIL-MCT8

Silica features viz. Porosity, Particle size and Surface treatment critically controlled to provide desired matting efficiency and smoothness as per formulation requirements. Available in different average particle sizes.

TYPICAL PRODUCT PROPERTIES

GRADE	% MOISTURE	pH (5% SLURRY)	AVERAGE PARTICLE SIZE, MICRONS	CARBON CONTENT %	APPLICATION BENEFIT
PolySIL - MCT4	3.0	7.2	5.0	7.0	Effective Matting agents available in varying particle size to achieve desired matting efficiency and smoothness as per coating formulations requirements.
PolySIL - MCT6	3.5	7.0	5.5	7.0	
PolySIL - MCT8	3.0	7.0	8.0	7.0	

SYNTHETIC AMORPHOUS PRECIPITATED HYDROPHOBIC SILICA

PRODUCT CHARACTERISTICS

- Used as matting/flatting agent in paints, coatings, defoamers, inks, powder coatings, toners, adhesives.
- The surface of the hydrophilic silica consisting of siloxane (Si-O-Si) and active silanol groups (Si-OH) are treated with silane and siloxane hydrophobizing agents
- As matting / flatting agent it introduces micro-roughness to the surface causing the light to be reflected in a diffused manner, thereby reducing the apparent gloss.
- As defoaming agent, it suppresses foaming in formulations.

BENEFITS

- High matting / flattening efficiency.
- Improved film forming properties.
- Improves shelf-life of Silicone sealants, water resistant with good rheology control.
- Effective anti-settling agent for coatings & pigment stability.
- Improved hydrophobic and rheological properties.
- The surface treatment coupled with lower particle size, promotes ease in incorporation & dispersibility.
- Free flow / anti-caking agent for powder coatings.

TYPICAL PRODUCT PROPERTIES

GRADE	% MOISTURE	pH (5% SLURRY)	AVERAGE PARTICLE SIZE, MICRONS	% SiO2, (ANHYDROUS BASIS)	BULK DENSITY, (g/l)	CARBON CONTENT %	APPLICATION BENEFIT
MFIL - TST	0.90	4.0	4.0	99.0	95	1.0	Hydrophobized Silica with low particle size for Inks/ Toners/ adhesives.
MFIL - TS1	0.90	6.8	4.5	99.2	90	1.5	Effective Matting agents available in varying particle size to achieve desired matting efficiency and smoothness as per coating formulations requirements.
MFIL - TS100	3.5	9.8	4.0	99.0	100	3.0	
MFIL - TS117	1.5	8.5	8.5	98.5	185	2.0	

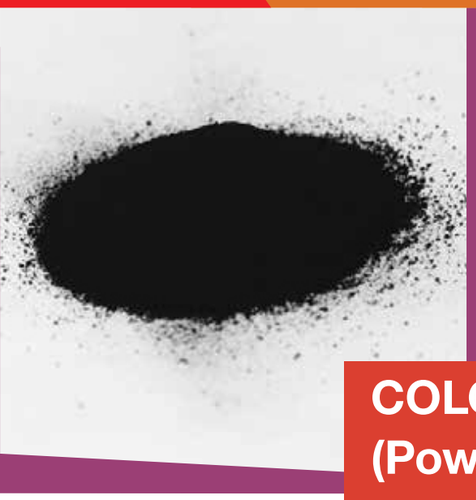
Himadri

Globally, SC is amongst the few completely integrated speciality carbon companies leveraging on its deep knowledge of one of the most versatile substances - Carbon. Over the years, with its core products and value-added by-products, the Company has established itself as one of the world's most extensive value chains in the Carbon segment. With access to superior, consistent and customized raw material feed from its in-house distillation unit and after its success in launching rubber grade series of carbon black, Himadri has successfully launched and marketed its speciality carbon black range that is high-performance and cater to niche applications in plasticstood and non-food grade), fibre, coatings and ink among others. They are commonly used in inks, paints, plastics master batches, wire and cable etc.

SPECIALITY CARBON BLACK	DESCRIPTION
KP103	Non ASTM Speciality Black. It is a cleaner pigment black with better jetness and bluish undertone. Finds extensive use in commodity plastics, news ink and coarse staple fibres. Provides easy dispersion and excellent coverage area.
KP202	Non ASTM high performance Speciality Black. KP202 is a clean black with minimum ash content and high jetness. It is most suited for footwear and colour intensive polyolefines.
KP203	Non ASTM Speciality Black. KP203 has the finest particle size (< 25nm) and optimum structure imparting high jetness. It is a high performance black with low grit and low ash content. It acts as an excellent UV absorbent making it most suitable for PVC films and sheets. It has improved coloring strength & higher gloss.
KC101	Non ASTM Speciality Black. It is very cost effective pigment black with an optimum structure most suitable for commodity plastic masterbatch, plastic pipes, films and moulded articles. It has a bluish undertone that can be tailor made according to the customer's demand. Most suitable application is in newspaper ink and plastics masterbatch.
KC120	Non ASTM Speciality Black. KC 120 has got excellent balance between surface area and structure thereby allowing higher loadability in the polymer matrix. It has a bluish undertone and hence less prone to degradation owing to lesser wavelength of blue base. It has softer pellets which gets easily dispersed and finds extensive use in variety of inks, synthetic paints & masterbatches.
KC144	Non ASTM Speciality Black. KC 144 has excellent loading capabilities offering a good balance between cost and better performance. It is a clean black with minimum ash content and has wide applications in masterbatches, films and moulded articles. It has minimum sulfur content, hence appears jetter.
KLAREX RG 223	KLAREX RG 223 is semi reinforcing type Carbon Black similar to ASTM N550 but with improved morphological features and excellent cleanliness. At similar loading, it provides better dispersion, easier processing, fast extrusion rate and higher dimensional stability as compared to N550. Excellent cleanliness features of KLAREX RG 223 results in higher screen life and significantly lower surface imperfections as compared to N550.
Electra 273	Non ASTM Speciality Black. Electra 273 is a high structured black, extremely clean and finds extensive use in conductive applications. The Carbon Black morphology is designed to allow easy dispersion that give smooth surface finish. Electra 273 contains minimum sulfur and ash content making it most suitable for cables and semi-conductive compounds. Electra 273 is particularly suited for low and medium voltage cable application.

ASTM CARBON BLACK GRADE

Grade	Tint % (ITRB#3)	OAN (cc/100g)	COAN (cc/100mg)	SSTA (m^2/g)	$N^2SA(m^2/g)$	$I^2SA(mg/g)$	P.D (kg/m^3)	S.R #325%	Fines 5% (max)
	D-3265	D-2414	D-3493	D-6556	D-6556	D-1510	D-1513	D-1514	D-1508
N-110	123±5	113±5	97±5	115±5	127±5	145±5	345±25	0.08	7
N-115	123±5	113±5	97±5	124±5	137±5	160±5	345±5	0.08	7
N-121	119±5	132±5	111±5	114±5	122±5	121±5	320±25	0.08	7
N-134	131±5	127±5	103±5	137±5	143±5	142±5	320±25	0.08	7
N-219	123±5	78±5	75±5	-	-	118±5	440±25	0.08	7
N-220	116±5	114±5	98±5	106±5	114±5	121±5	355±25	0.08	7
N-231	120±5	92±5	86±5	107±5	111±5	121±5	400±25	0.08	7
N-234	123±5	125±5	102±5	112±5	119±5	120±5	320±25	0.08	7
N-299	113±5	124±5	104±5	97±5	104±5	108±5	335±25	0.08	7
N-326	111±5	72±5	68±5	76±5	78±5	82±5	445±25	0.08	7
N-330	104±5	102±5	88±5	75±5	78±5	82±5	380±25	0.08	7
N-339	111±5	120±5	99±5	88±5	91±5	90±5	345±25	0.08	7
N-347	105±5	124±5	99±5	83±5	85±5	90±5	335±25	0.08	7
N-351	100±5	120±5	95±5	70±5	71±5	68±5	345±25	0.08	7
N-375	114±5	114±5	96±5	91±5	93±5	90±5	345±25	0.08	7
N-539	-	111±5	81±5	38±5	39±5	43±5	385±25	0.08	7
N-550	-	121±5	85±5	39±5	40±5	43±5	360±25	0.08	7
N-650	-	122±5	84±5	35±5	36±5	36±5	370±25	0.08	7
N-660	-	90±5	74±5	34±5	35±5	36±5	440±25	0.08	7
N-683	-	133±5	85±5	34±5	36±5	35±5	355±25	0.08	7
N-762	-	65±5	59±5	28±5	29±5	27±5	515±25	0.1	7
N-765	-	115±5	81±5	32±5	34±5	31±5	370±25	0.08	7
N-772	-	65±5	59±5	30±5	32±5	30±5	520±25	0.1	7
N-774	-	72±5	63±5	29±5	30±5	29±5	490±25	0.1	7



COLORX Speciality Carbon Blacks (Powder) for Inks, Coatings & Plastics

KOHLENSTOFF® Carbon Blacks

Unleashing the power of creative Carbon Black

SPECIALITY CARBON BLACKS	PRODUCT DESCRIPTION	EXAMPLE APPLICATIONS
COLORX 12	General purpose powder carbon black pigment with low surface area to enable high loading and better flow; it is easy to disperse while offers cost effecting tinting and color.	» Tinting black for inks, plastics, and coatings » Graphitized carbon products
COLORX 13	Regular color powder speciality grade with medium structure suitable with good dispersion and processing characteristics needing a higher rheology; also available in beaded form as JETEX 105.	» Printing inks » Newspaper ink » Adhesives & sealants
COLORX 14	Similar to COLORX19 but with higher color strength; designed to give good gloss in lithographic gloss inks and other liquid inks requiring high gloss and lower viscosity. Also available in beaded form as JETEX 114.	» Letterpress & offset ink » Liquid inks
COLORX 17	Speciality powder carbon black designed for applications needing good gloss, jetness, and masstone undertone.	» Industrial and powder coatings » Inks including UV cure inks, flexo & gravure, and other ink applications
COLORX 19	General purpose low to medium color black, offering good covering power and masstone strength; its lower structure enables higher loadings or lower rheology. Also available in beaded form as JETEX 111.	» Letterpress & offset ink » Flexo & Gravure ink » Industrial & architectural masstone coatings applications
COLORX 22	Speciality carbon black with high structure and higher surface area offering good covering power, jetness, and UV protection; also available in beaded form as JETEX 205.	» Aqueous flexo ink » Powders Coatings » Industrial and decorative coatings » Adhesives & sealants » PVC compounding
COLORX 34	Speciality powder carbon black, offering excellent jetness and strength in a masstone.	» Decorative coatings, masstone coatings with good jetness and blue undertone » Adhesives & sealants
COLORX 44	General purpose pigment black offering basic color and blue tone as well as good tinting power with good viscosity and flow properties; also available in beaded form as JETEX 145.	» General inks and coatings, » Tinting in architectural paints » Letterpress printing ink » Industrial tinting coatings
COLORX 45	Powder black with low structure, offering high jetness, excellent blue undertone and good flow properties. Also available in beaded form as JETEX 345.	» Printing inks, including liquid inks (flexo/gravure) » Heat set and sheet-fed offset » UV curing inks
COLORX 70	General purpose low color black with high structure suitable for many coloring and tinting applications; it exhibits excellent dispersion and high blue undertone. Also available in beaded form as JETEX 175.	» Web offset and gravure inks » Industrial inks and coatings » Tinting for architectural paints » Under-the-hood coatings applications.
COLORX 91	Medium color powder black designed medium blackness with good bluetone and gloss; lower surface area and structure enables easier dispersion and lower viscosity than other medium color blacks. Also availabled as ONXY 901 beads.	» Industrial & architectural coatings, lower end automotive refinish » Colour dispersions for leather » Engineering plastics compounding
COLORX 93	Medium color powder black, offering excellent jetness, good UV protection characteristics, and blue undertone; also available in beaded form.	» Industrial & architectural coatings, lower end automotive refinish » Colour dispersions for leather » Engineering plastics compounding
COLORX 319	High structure medium color powder black, providing high color intensity; easier to disperse than other medium color blacks to provide high jetness in formulations along with good blue undertone. Also available in beaded form.	» Industrial and automotive coatings, lower end automotive refinish » Deep black aesthetic application » Specialty medium to higher jet industrial coatings

Typical Values

Grade	Tint (%)	Product form	Avg Particle Size (nm)	Structure cc/100gm (ASTM D2414)	Blackness (My) DIN-55979
COLORX 12	60	Powder	52	90	212
COLORX 13	103	Powder	27	103	237
COLORX 14	125	Powder	21	54	253
COLORX 17	130	Powder	21	60	278
COLORX 19	112	Powder	27	70	246
COLORX 22	112	Powder	21	115	256
COLORX 34	120	Powder	20	124	257
COLORX 44	58	Powder	62	70	212
COLORX 45	100	Powder	31	45	228
COLORX 70	60	Powder	49	117	218
COLORX 91	135	Powder	17	57	279
COLORX 93	145	Powder	17	58	280
COLORX 319	143	Powder	16	104	282

Unleashing the Power of Creative Carbon Black

Himadri offers a range of **JETEX** and **ONYX** Speciality Carbon Blacks to meet food contact requirements across regions include (but not limited to) the following:

SPECIALITY CARBON BLACKS	Tint (%)	PRODUCT DESCRIPTION	EXAMPLE APPLICATIONS
JETEX 114	125	This is a low structure high surface area black that has been specifically formulated with a high level of color intensity in mind, making it ideal for applications where high gloss and a blue undertone is desired. Its easy-to-disperse properties make it easy to process even at higher loading. Designed to give good gloss in lithographic gloss inks and other liquid inks requiring high gloss and lower viscosity.	» Letterpress & offset ink » Liquid inks » Gravure inks » Flexo inks
JETEX 345	100	JETEX 345 is a low structure high color black that has been specifically formulated with a high level of color intensity in mind, making it ideal for applications where high gloss and a blue undertone is desired. Its easy-to-disperse properties make it convenient to process even at higher loading. This black has a very high blue undertone.	» Printing inks, including liquid inks (flexo/gravure) » Heat set and sheet-fed offset » UV curing inks

Product Form & Logistics

Product Form: Powder = **Regional Availability:** Global = **Bag Packaging Options:** 10 & 20 kg paper bags

JETEX 175	55	Speciality Carbon Black providing a good balance of dispersability and colour/covering power
JETEX 107	104	Designed specifically for applications requiring UV protection; also offers good colour with blue undertone
JETEX 205	116	High-performance speciality black designed to provide superior UV protection along with good covering power
JETEX 115P/300P	100	High performing P-type carbon blacks with excellent jetness and blue tone with good dispersibility in a range of polymers

BARONX Speciality Carbon Blacks (Oxidized) for Inks and Coatings

KOHLENSTOFF ® Carbon Blacks

Unleashing the power of creative Carbon Black

SPECIALITY CARBON BLACKS	PRODUCT DESCRIPTION	EXAMPLE APPLICATIONS
BARONX 09	An oxidized furnace-process carbon black designed to have a high gloss and good color strength making it suitable for a range of printing inks applications; the oxidized surface assists dispersion and good flowability in inks.	» Lithographic inks » Liquid inks » Artificial leather
BARONX 10	High-purity carbon black with a low aggregate size. It is known for its excellent jetness, opacity, printability, UV stability and ease of dispersability. BARONX 10 is used in a wide variety of applications, including printing inks, paints and coatings, plastics, adhesives, and sealants.	» Printing inks: Newspapers, magazines, books, and packaging; it is valued for its excellent jetness, opacity, and printability » Paints and coatings: Automotive finishes, industrial coatings, and architectural coatings; it is valued for its excellent jetness, opacity and durability » Also used in different types of polymer application due to its excellent jetness, and UV stability
BARONX 12	High jetness oxidized furnace process carbon black. It is easily dispersed to provide better masstone in water-based primers.	» Industrial and architectural coatings » Water-based primers
BARONX 32	This high surface area grade provides high color density in masstone paints and coatings, ideal for higher end general industrial coatings and lower-end automotive refinish, excellent jetness, UV protection, and blue undertone.	» Solvent & water-based ink (Flexo/Gravure) » UV Curing inks » High jet industrial coatings & powder coatings » Medium jet automotive applications
BARONX 37	Oxidized furnace-process carbon black offering high jetness, UV protection, and conductivity and is dispersable in water-based primers; oxidation also provides improved rheology.	» Printing and packaging inks » Automotive, architecture and industrial paints and coatings » Adhesives and sealants
BARONX 45	An oxidized furnace-process carbon black designed for liquid inks needing good opacity and ink density while offering improved blue undertone for aesthetic pleasing jetness in a masstone; the oxidized surface assists dispersion and good flowability in inks.	» Liquid inks » UV Cured Inks
BARONX 55	Himadris highest surface area grade to give high jetness and excellent blue undertone; surface treated to enhance dispersion and wetting in both solvent- and water-borne systems	» OEM automotive coatings and high-end refinishing » High jet industrial coatings & powder coatings

Typical Values

Grade	Tint (%)	Product form	Avg Particle Size (nm)	Structure cc/100gm (ASTM D2414)	Blackness (My) DIN-55979
BARONX 09	111	Powder	27	71	240
BARONX 10	125	Powder	24	100	250
BARONX 12	65	Powder	50	90	215
BARONX 32	105	Powder	24	105	255
BARONX 37	112	Powder	29	110	242
BARONX 45	100	Powder	31	45	251
BARONX 55	135	Powder	14	95	295

Product Form & Logistics

- **Product Form:** Powder
- **Regional Availability:** Global
- **Bag Packaging Options:** 10 & 20 kg paper bags

ELECTRA Speciality Blacks for Electrostatic Dissipative (ESD) Applications

KOHLENSTOFF® Carbon Blacks

Unleashing the Power of Creative Carbon Black

Conductive Black for ESD Applications

Himadris ELECTRA range of conductive carbon blacks offers compounders and formulators multiple options for their demanding conductive applications. ELECTRA speciality blacks are clean carbon blacks with low sulfur, low ionics, low physical grit that enable end-users to produce compounds that extend the performance life of the final article by protecting against damage due to sudden electrostatic discharge.

ELECTRA SPECIALITY CARBON BALCKS	PRODUCT DESCRIPTION
ELECTRA 273	Standard conductive carbon black providing conductive properties in power cable and electrostatic dissipative (ESD) applications where protection from sudden electrostatic discharge is required.
ELECTRA 275	Premium conductive carbon black with low grit achieving dissipative performance at lower loadings than ELECTRA 273 while still easy to process.
ELECTRA 295	ELECTRA 295 is a new premium conductive carbon black offering conductivity at lower loadings than ELECTRA 275 lessening the impact on the underlying mechanical performance of the polymer or substrate.

ONYX Speciality Blacks for Synthetic Fibre Applications

KOHLENSTOFF® Carbon Blacks

Unleashing the Power of Creative Carbon Black

Introducing ONYX 600-series from Himadri Speciality Chemical Ltd. Premium Speciality Carbon Blacks designed for the demanding requirements of synthetic fibre. They are specifically designed to have low physical impurities and good dispersion characteristics to enable extended spin pack life and low fibre breakage during spinning. In addition, our ONYX Speciality blacks offer:

- High colour strength and blue undertone
- Low physical impurities for low filterability
- Good dispersion and processing characteristics

Himadri's family of ONYX speciality blacks for synthetic fibre have proven performance in PET, nylon, and other polymers.

ONYX SPECIALITY BLACKS	PRODUCT DESCRIPTION
ONYX 636	ONYX 636 speciality black offers the lowest the potential filter pressure values (FPV) based on its low physical impurities specifically designed to provide long spin pack life reducing instances of fibre breakage.
ONYX 640	ONYX 640 speciality black is designed for large denier fibre, compared to ONYX 636, while offering more jetness for a darker colour.
ONYX 300F	High purity carbon black with excellent jetness and blue tone compliant with FDA regulation 21 CFR 178.3297 for contact with food when used as a colorant in polymers.(maximum allowable loading in final articles is 2.5% by weight)
ONYX 903	Medium colour furnace black offering the highest potential to achieve deepest black colour when fully dispersed.

A complete range of crosslinking peroxides

Nouryon

Nouryons range of organic peroxides for the crosslinking of elastomers and thermoplastics is very extensive. Companies all over the world depend on our Trigonox® and Perkadox® organic peroxide brands. Why? Because they are an important ingredient in the production of everything from hi-tech automotive parts such as hoses and belts to shoe soles and power distribution cables.

Examples include:

Trigonox 311
PEX pipes, rotomolding
Trigonox 145
PEX pipes, rotomolding
Trigonox 101
PEX pipes, polymer modification, technical rubber goods
Trigonox T
wire & cable (direct peroxide injection)
Perkadox 14
wire & cable, technical rubber goods, footwear
Perkadox BC
wire & cable, footwear, technical rubber goods
Trigonox 117 and Trigonox 131
for EVA and POE encapsulant films
Trigonox 29
for fast on-set of cure
Perkadox PM-50S-ps
extruded silicone rubber articles such as silicone rubber cable, seals & tubes (halogen free)

Much of our success is due to our philosophy of creating close partnerships with our customers. What do you want to achieve? From optimizing applications, improving efficiencies, resolving difficulties or even developing new crosslinking peroxides, were happy to meet with you to discuss your requirements.

This product guide provides an overview of our main, commercially available cross linking peroxides. We invite you to visit us at www.nouryon.com for complete product listings.

Formulations with phlegmatizers and carriers or concentrations other than those indicated, as well as unique custom made peroxide compositions can be made available with due observance of safety characteristics and the appropriate environmental and transportation regulations. Whatever your particular requirements, we can develop the product to match.

Recommended dosage levels

Peroxide	Trigonox 29-40	Trigonox 17-40	Perkadox BC-40	Perkadox 14-40	Trigonox 101-45
Safe processing temperature (°C)	115	125	130	135	135
Typical crosslink temperature (°C)	145	160	170	175	175
Polymer	**parts of peroxide per 100 parts of polymer**				
NR; IR	2.3 - 4.5	2.5 - 5.0	2.0 - 4.1	1.3 - 2.5	1.3 - 2.4
BR	1.0 - 2.1	1.1 - 2.3	0.9 - 1.9	0.5 - 1.2	0.5 - 1.2
CR	1.1 - 3.0	1.3 - 3.3	1.0 - 2.7	0.6 - 1.7	0.6 - 1.6
SBR	1.9 - 4.1	2.1 - 4.6	1.7 - 3.7	1.1 - 2.3	1.1 - 2.2
NBR	2.6 - 4.5	2.9 - 5.0	2.4 - 4.1	1.5 - 2.5	1.4 - 2.4
HNBR	6.8 - 11.3	7.5 - 12.5	6.1 - 10.1	3.8 - 6.3	3.7 - 6.1
POE[1]	6.8 - 11.3	7.5 - 12.5	6.1 - 10.1	3.8 - 6.3	3.7 - 6.1
EPM[1]; EPDM	6.8 - 11.3	7.5 - 12.5	6.1 - 10.1	3.8 - 6.3	3.7 - 6.1
PE	1.5 - 7.6	1.7 - 8.4	1.4 - 6.8	0.8 - 4.2	0.8 - 4.0
CM [1]	6.8 - 10.6	7.5 - 11.7	6.1 - 9.5	3.8 - 5.9	3.7 - 5.7
EVA	2.6 - 5.3	2.9 - 5.8	2.4 - 4.7	1.5 - 3.0	1.4 - 2.9
Q [2]			1.0 - 2.0	0.4 - 0.8	0.4 - 0.8

Addition of a coagent is recommended.
1 Silicone rubber can also be crosslinked with Perkadox PD-50S, Perkadox L-50S and Perkadox PM-50S.
2 Required amounts of peroxide: 1.1 - 2.3 phr, 0.7 - 1.4 phr and 0.8 - 1.6 phr respectively.
Typical crosslink temperatures 90°C, 105°C and 110°C.

Peroxide versus sulfur crosslinking

Advantages of peroxide crosslinking in comparison to sulfur cure:

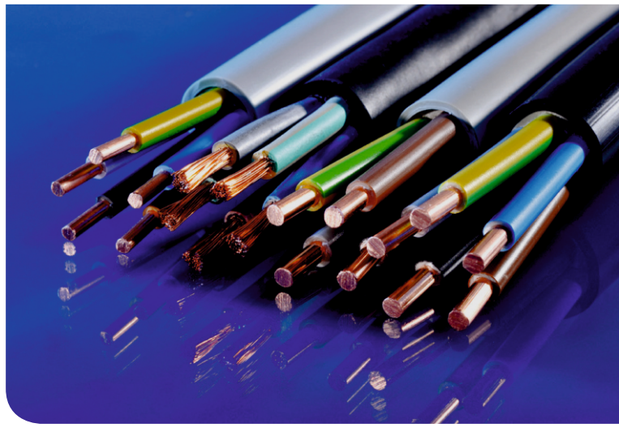
Simple formulation.
Relatively easy to trace decomposition products.
Storage of the peroxide-containing compound without bin scorch.
High processing temperature.
Rapid vulcanization without reversion.
Good compression set, particularly at elevated temperatures.
High temperature resistance.
Limited extractable constituents from final product.
No staining of the finished parts.
No discoloration of crosslinked product by contact with metals and PVC.
Most peroxides do not cause blooming.
Co-vulcanization of saturated and unsaturated elastomers.
Co-vulcanization of elastomers and thermoplastics .
Copolymerization with polymerizable plasticizers or coagents to give controlled hardness and stiffness, coupled with easy processing.
Zinc oxide-free formulations possible.

Points of attention for peroxide crosslinking:

Sensitivity to oxygen under curing conditions.
Certain components of the rubber compound such as
- fillers
- extender oils
- antioxidants
- resins

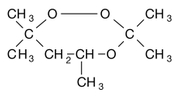
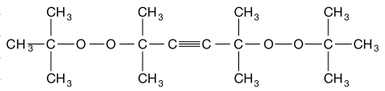
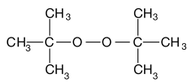
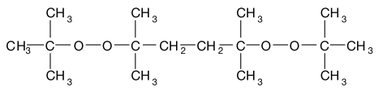
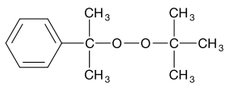
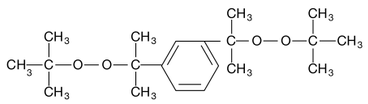
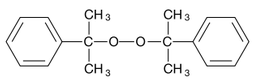
must be selected with care because they may, under certain conditions, interfere with free radicals.
Usually, tensile and tear strength properties are reduced by about 15%, when compared to a conventional sulfur based crosslinking system.
Scorch and cure time are less flexible,
since they are determined mainly by the temperature.
During cure, some peroxides may lead to distinct odors.
Post cure may be necessary.

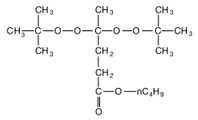
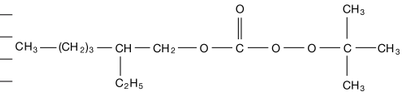
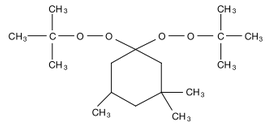
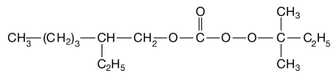
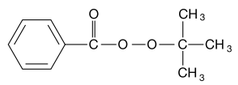
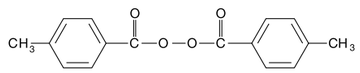
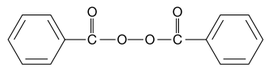
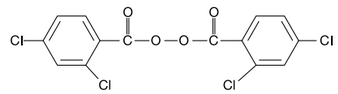
Nouryon



PD = powder
GR = granules
PS = paste
MB = EPR bound
EP = POE bound

[1] Trigonox B has a boiling point of 110°C and a flash point of 6°C. Therefore, this product is not recommended for standard rubber.
[2] Other concentrations are available on request.

Product name	Chemical name [CAS no.]	Mol. weight	Assay (%)	Main carrier / solvent	Processing data: Safe processing temperature (°C)	Processing data: Typical crosslink temperature (°C)
	3,3,5,7,7-Pentamethyl-1,2,4-trioxepane [215877-64-8]	174.3			180	220
Trigonox 311			95			
	2,5-Dimethyl-2,5-di(tert-butylperoxy)hexyne-3 [1068-27-5]	286.4			145	185
Trigonox 145-E85			85	mineral oil		
	Di-tert-butyl peroxide [110-05-4]	146.2			145	180
Trigonox B [1]			99			
	2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane [78-63-7]	290.4			135	175
Trigonox 101			>92			
Trigonox 101-50D-PD			50	silica		
Trigonox 101-45B-GR			45	calcium carbonate		
Trigonox 101-45D-PD			45	silica		
Trigonox 101-20PP-PD [2]			20	PP		
Trigonox 101-45S-PS			45	silicone oil		
	tert-Butyl cumyl peroxide [3457-61-2]	208.3			135	175
Trigonox T			95			
	Di(tert-butylperoxyisopropyl)benzene [25155-25-3; 2212-81-9]	338.5			135	175
Perkadox 14S-(FL)			98			
Perkadox 14-40B-PD/GR-S			40	calcium carbonate		
Perkadox 14-40K-PD-S			40	clay		
Perkadox 14-40MB-GR-S			40	EPR, calcium carbonate		
Perkadox 14-EP40			40	POE, calcium carbonate		
	Dicumyl peroxide [80-43-3]	270.4			130	170
Perkadox BC-FF			99			
Perkadox BC-40B-PD/GR			40	calcium carbonate		
Perkadox BC-40K-PD			40	clay		
Perkadox BC-40MB-GR			40	EPR, calcium carbonate		
Perkadox BC-40S-PS			40	silicone oil		
Perkadox BC-EP40			40	POE, calcium carbonate		

Product name	Chemical name [CAS no.]	Mol. weight	Assay (%)	Main carrier / solvent	Processing data: Safe processing temperature (°C)	Processing data: Typical crosslink temperature (°C)
	Butyl 4,4-di(tert-butylperoxy)valerate [995-33-5]	334.5			125	160
Trigonox 17-40B-PD/GR			40	calcium carbonate		
Trigonox 17-40MB-GR			40	EPR, calcium carbonate		
	tert-Butylperoxy 2-ethylhexyl carbonate [34443-12-4]	246.3			120	150
Trigonox 117			>98			
	1,1-Di(tert-butylperoxy)-3,3,5-trimethylcyclohexane [6731-36-8]	302.5			115	145
Trigonox 29-40B-PD/GR-E			40	calcium carbonate		
Trigonox 29-40MB-GR-E			40	EPR, calcium carbonate		
	tert-Amylperoxy 2-ethylhexyl carbonate [70833-40-8]	260.4			110	140
Trigonox 131			>94			
	tert-Butyl peroxybenzoate [614-45-9]	194.2			100	140
Trigonox C			98			
	Di(4-methylbenzoyl) peroxide [895-85-2]	270.3			85	110
Perkadox PM-50S-PS			50	silicone oil		
	Dibenzoyl peroxide [94-36-0]	242.2			85	105
Perkadox L-50S-PS			50	silicone oil		
	Di(2,4-dichlorobenzoyl) peroxide [133-14-2]	380.0			75	90
Perkadox PD-50S-PS			50	silicone oil		

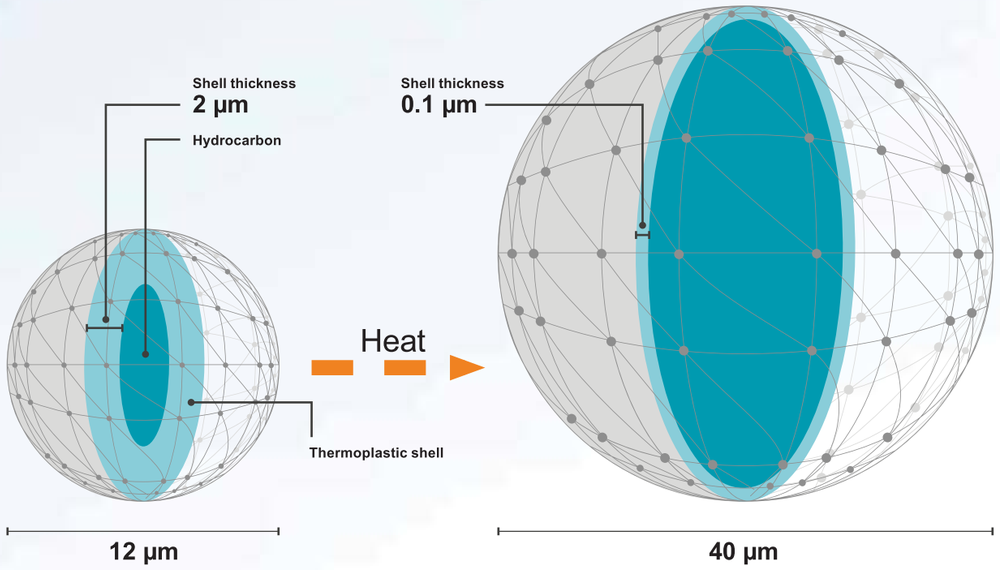
Expancel

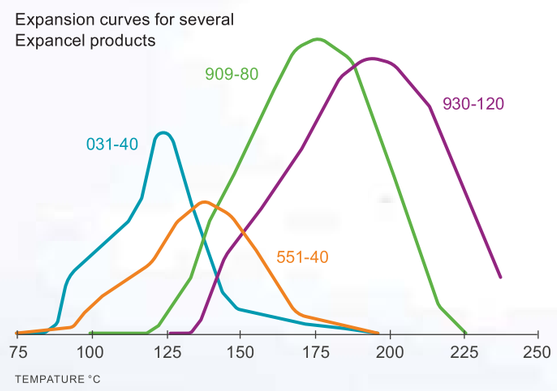
The engineered solution that expands your horizons

From small sphere to big idea

Its a simple concept a small thermoplastic sphere encapsulating a gas. Add heat and the gas expands while the shell softens. The result is a dramatic increase in volume and billions of new possibilities.

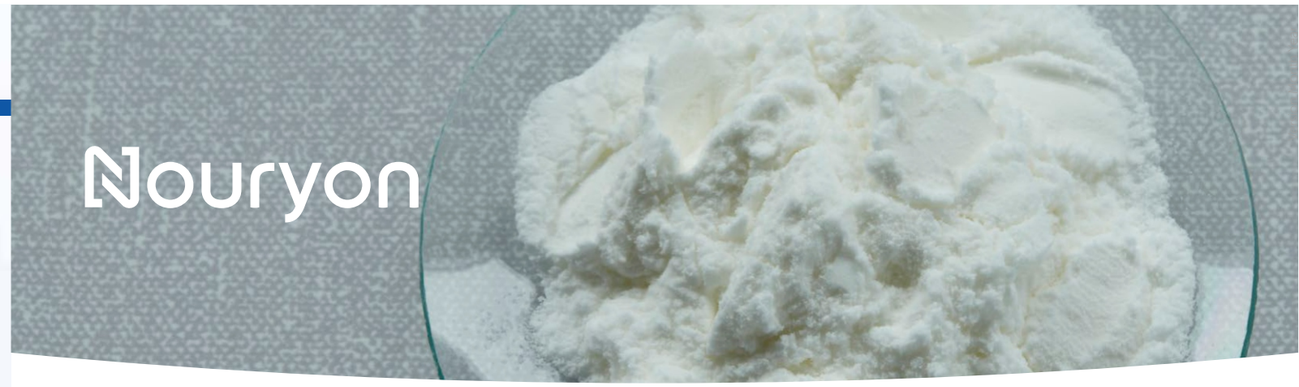
Expancel has dual functionality as both a lightweight filler and a blowing agent. When you need to cut manufacturing costs, reduce weight, create attractive textures, protect against damage or shield against the elements, Expancel delivers.





85–230°C

Different products of Expancel are available with expansion temperatures in the range of 85°C to 230°C (185–446°F).



Technical Data Sheet
Expancel® DU Microspheres

Specification

(values presented on Certificate of Analysis)

Typical characteristic

Expancel® grade	Thermomechanical Analysis [1] Tstart °C	Tmax °C	Density kg/m³	Particle size D(0.5) [2] µm	Solvent resistance [3]
031 DU 40	80-95	118-133	≤ 12	10-16	3
053 DU 40	95-102	136-144	≤ 20	10-16	3
051 DU 40	105-110	142-151	≤ 25	9-15	4
043 DU 80	94-114	144-164	≤ 10	16-24	5
920 DU 20	118-143	152-172	≤ 25	5-9	5
920 DU 40	121-131	168-178	≤ 17	10-16	5
909 DU 80	118-128	172-187	≤ 10	18-24	5
920 DU 80	121-131	177-192	≤ 14	18-24	5
HP92 DU 80	116-126	180-200	≤ 20	20-30	5
950 DU 80	136-146	188-200	≤ 12	18-24	5
093 DU 120	119-129	186-201	≤ 6.5	28-38	5
951 DU 120	131-141	191-206	≤ 9	28-38	5
930 DU 120	117-127	189-204	≤ 6.5	28-38	5
938 DU 120	120-132	192-210	≤ 7.5	26-40	5
920 DU 120	118-128	191-203	≤ 14	28-38	5
980 DU 100	169-189	209-229	≤ 14	20-30	5
WB 500 DU	128-143	177-207	≤ 12	24-42	5
New products:					
044 DU 20	100-108	143-160	≤ 25	6-9	3
044 DU 40	98-108	150-170	≤ 15	9-15	4

Product information

DU = Dry powder of unexpanded Expancel® Microspheres
Use the product within three years after production date, if unopened.
Not all grades available in all locations. Check local sales office for availability.

Expancel

Technical Data Sheet
Expancel® WU Microspheres

Specification

(values presented on Certificate of Analysis)

Expancel® grades	Thermomechanical Analysis [1] Tstart °C	Tmax °C	Density kg/m³	Particle size D(0.5) [2] µm	Dry content %
031 WUF 40	80-95	118-133	≤ 12	10-16	73.5-78.5
007 WU 40	91-99	138-143	≤ 15	10-16	68.5-73.5
007 WUF 40	91-99	138-143	≤ 15	10-16	68.5-73.5
053 WU 40	95-102	136-144	≤ 20	10-16	68.5-73.5
043 WU 80	94-114	144-164	≤ 10	16-24	67-75
920 WUF 40	121-131	168-178	≤ 17	10-16	68.5-73.5
909 WU 80	118-128	172-187	≤ 10	18-24	68.5-73.5

New products:

044 WU 20	100-108	143-160	≤ 25	6-9	65-80
044 WU 40	98-108	150-170	≤ 15	9-15	68.5-73.5

Product information

WU = Wet cake of unexpanded Expancel® microspheres
Use the product within two years after production date, if unopened.
Not all grades available in all locations. Check local sales office for availability.

A variety for every need

Expancel is available either expanded or unexpanded. Both types can be supplied in wet or dry form. We also have Masterbatch. This means Expancel works in systems with or without heat or water. We offer a variety of chemical compositions to give expansion at different temperatures.

A range of particle sizes makes it possible to achieve numerous surface effects, including matting, smoothness and roughness. The very low density gives a significant weight reduction even at small dosages.

WU Wind turbines
Add bulk without adding weight. Increase stiffness and reduce the need for binder.

The 7 forms of Expancel

Expancel DU
Dry, unexpanded microspheres

Expancel WU
Wet, unexpanded microspheres

Expancel MB
Masterbatch, unexpanded microspheres mixed with a carrier

Expancel SL
Slurry, unexpanded micro-spheres dispersed in water

Expancel DE(T)
Dry, expanded microspheres

Expancel WE
Wet, expanded microspheres

Expancel FG
Microspheres for food packaging applications

One ingredient. Unlimited possibilities.

Lightweight filler

Application	BUILDINGS & INFRASTRUCTURE	TRANSPORTATION	CONSUMER GOODS	INDUSTRIAL / OTHER	
Cultured marble					Reduced weight, less risk of cracks during production, improved machinability, lower resin consumption
PU foams					Reduced weight, controlled and uniform foam structure
Model-making board					Cost savings, weight reduction, improved machinability
Polyester putties					Low volume cost, easy to apply, extraordinary sanding properties, reduced shrinkage
Underbody coatings					Improved stone chip resistance and sound damping, low UBC weight helps cut fuel consumption
Sound-damping coatings					Reduced noise and vibrations
Interior panels for car roofs/sides					Low weight, improved flexibility
Body fillers					Low weight, better sandability, good surface appearance, non-irritable dust during sanding, reduced cracking and shrinkage of the dried material, easier to apply, low hardness, low impact on curing parameters
Paper & Board					Improved bulk, bending stiffness, thermal insulation. Coated applications can give soft touch and anti-slip
Porous ceramics					Controlled and uniform pore structure
Silicone rubber					Cost savings, reduced weight, uniform and closed cell structure, dry surface
Cable-filling compound					Reduced dielectric constant, reduced water penetration, cost reduction, reduced weight
Composites					Reduced weight, reduced cost / lower resin consumption, increased stiffness
Crack filler					Sandability, easy to apply, sanding dust less irritating than with glass MS
Modeling clay					Easy to shape, low shrinkage upon drying
Paint					Reduced weight, better applicability, higher water vapor permeability, matting effect, low emission of VOC, lower transportation cost for producer
Sealants					Cost savings, weight reduction, reduced volume shrinkage during drying
Genuine leather					Outstanding filling capacity, very low shrinkage, very good buffing properties, good flexibility, soft touch feeling
Elastomeric cool roof coatings					High solar reflectance and thermal insulation, enhanced durability and weather resistance

Blowing agent

Application	BUILDINGS & INFRASTRUCTURE	TRANSPORTATION	CONSUMER GOODS	INDUSTRIAL / OTHER	
Microagglomerated cork					Excellent compressibility, ultimate seal, optimal granule structure
Synthetic cork					Reduced weight, density control, better elasticity
Food packaging					Excellent seal, no shrinkage, no water absorption
PU foams					Reduced weight, controlled and uniform foam structure
Thermoforming					Thinner sheets, shorter heating time
Wood-plastic composites					Reduced weight, easier to saw and drill
Shoe soles					Reduced weight, matt surface, improved wearing comfort due to unique cell structure
Underbody coatings					Improved stone chip resistance and sound damping, low UBC weight helps cut fuel consumption
Sound-damping coatings					Reduced noise and vibration
Interior panels for car roofs/sides					Low weight, improved flexibility
Gaskets for automatic gear boxes					Improved sealing effects, improved compression set, fills voids between matching surfaces
Expandable adhesives for cars					Low weight, improved stiffness, improved compression set, fills voids between matching surfaces, creates inner pressure and better sealing
Floor mats for cars					Low weight, anti-slip effect, matting effect, elasticity, more rubberlike appearance
Weather strips for cars					Low weight, cost savings, uniform closed cell structure, better sealing properties, narrow specification along profile compared to CBA, more stable foaming process, better surface appearance
Lightweight foam					Good absorbance and recovery
Nonwoven for composites					Cost savings, reduced weight, good insulation, increased dimensional stability, increased bulk and thickness
Paper & Board					Improved bulk, bending stiffness, thermal insulation. Coated applications can give soft touch and anti-slip
Porous ceramics					Controlled and uniform pore structure
Printing ink for wallpaper, fabrics and textiles					3D effects, matting, peach or suede look
Sheets, boards & profiles					Closed cells, foam stability, reduced weight, cost saving potential
Silicone rubber					Cost savings, reduced weight, uniform and closed cell structure, dry surface
Thermal release material					Debonding at elevated temperatures
Artificial leather					Surface modifications such as suede and nubuck effects

Relflex ELASTOMERS
Stretching Limits

PBR- Poly butadiene Rubber

Polybutadiene Rubber or simply Butadiene Rubber is one of the oldest offerings of Relflex Elastomers. Marketed under the brand name, RelflexCisamer, it is an international quality product, with high Cis content, has high elasticity and is resistant to dynamic stress, thus ensuring longer product durability.Quality of RelflexCisamer PBR is benchmarked with global manufacturers linked to the standards of International Institute of Synthetic Rubber Producers (IISRP). World class manufacturing facilities (Cobalt and Nickel grades) are located at Vadodara, Gujarat.

PLANT CAPACITY 120,000 METRIC TONNES

Cobalt and Nickel based Elastomer Grades

Grade	**Relflex CISAMER PBR 1220**	**Relflex CISAMER PBR 01**
Catalyst	Cobalt (Co)	Nickel (Ni)
Cis 1, 4 Configuration (%)	96	96.5
Stabilizer (type)	non-staining	non-staining
Mooney Viscocity	45	45
ML (1+4) @ 100 °C, MU		
Volatile Matter (%)	0.4	0.5
Ash Content (%)	0.1	0.08

Compounded Properties*

Grade	**Relflex CISAMER PBR 1220**	**Relflex CISAMER PBR 01**
Compound Mooney Viscosity,	59	60
ML (1+4) @ 100 °C		
Rheological Properties : ODR : 160 °C; + 1° arc;		
100 cpm (ASTM-D 2084)		
Min. Torque (lb.in)	10.5	10.2
Max. Torque (lb.in)	38	36
Ts1 (Minutes)	4	3.5
Tc50 (Minutes)	8	8
Tc90 (Minutes)	12	11

*Compound recipe: Method ASTM D 3189, Test Method – B
RelflexCisamer PBR 1220/01 - 100.0, Carbon black IRB - 60.0, Naphthenic oil - 15.0, Zinc Oxide - 3.0, Stearic Acid - 2.0, Accelerator TBBS - 0.9, Sulphur - 1.5

SBR -Styrene Butadiene Rubber

PLANT CAPACITY 150 KT PER ANNUM

SBR is one of the highest consumed synthetic rubbers in the world due to its versatility, enhanced abrasion resistance. Some of the major applications of E-SBR include passenger car and light truck tyres and truck tyre retreads. It is also preferred in applications such as conveyor belts, shoe soles, V-belts, moulded rubber goods etc.

Relflex Stylamer	Mooney Viscosity ML(1+4)@ 100°C, MU	Bound Styrene, %	Oil, PHR	Oil Type	Key Features	Applications
SBR 1500	52	23.5	-	-	Good tack & slightly slow curing	Tyre & conveyor belt
SBR 1502	52	23.5	-	-	Good processability & abrasion	Tyre, footwear & mechanical rubber goods.
SBR 1509	33	23.5	-	-	Enhanced processibility & easier incorporation high filler loading	Footwear, microcellular sole & injection molded article.
SBR 1712	51	23.5	37.5	DAE	Easier incorporation of filler-maintaining good processability	Tyre, conveyor belt, hose & mechanical rubber goods.
SBR 1721	54	40	37.5	DAE	Excellent road grip & good processability	Tyre tread (high performance type)
SBR 1723	48	23.5	37.5	TDAE	Alternative to SBR 1712, lower rolling resistance	Tyre, conveyor belt, hose & mechanical rubber goods.
SBR 1739	52	40	37.5	TDAE	Alternative to SBR 1721, better processing behaviour & improved abrasion resistance	Tyre tread (high performance type)
SBR 1778	49	23.5	37.5	Napthenic Oil	Alternative to SBR 1712, Good processability & easy incorporation	Footwear, hoses, light colored goods & flooring.
SBR 1783	50	23.5	37.5	RAE	Alternative to SBR 1712	Alternative to SBR 1712 Tyre, conveyor belt, hose & mechanical rubber goods.

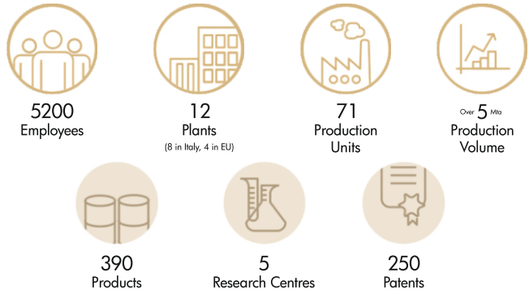
BUTYL RUBBER

Butyl Rubber is a synthetic rubber, a copolymer of isobutylene with isoprene. The product is impermeable to air and used in many applications requiring an airtight rubber. Butyl Rubber is used in the manufacture of tyre inner liners, automotive tubes, pharmaceutical closures, ball bladders, adhesives, sealants, vibration mounts, electrical fluids and lubricants among others.

Parameter	BK-1675N/IIR-1675	Test Method
Mooney viscosity ML (1+8@(125° C), MU (without rolling)	46-56	ASTM D 1646
Unsaturation, mole percent	1.4-1.8	SIBUR method
Mass fraction of calcium sterate, %, max	1.2	SIBUR method
Volatile matter content, %, max	0.3	ASTM D 5668
Non-standing Antioxidant content, % (CAS No 6683-19-8)	0.02-0.08	SIBUR method
Ash content, %, max	0.4	ASTM D 5667

Properties	IMPRAMER C 1139	Unit	Test Method
Mooney Viscosity (ML 1+8, 125°C)	33-43	MU	ASTM D 1646
Chlorine	1.15-1.35	wt %	RSEPL method
Volatile matter	max. 0.5	wt %	ASTM D5668
Non-Staining Antioxidant	min. 0.05	wt %	RSEPL method
Ash	max. 0.5	wt %	ASTM D5667

Associates



Versalis is the Eni chemical company has been leading the market in a host of businesses such as plastics and rubbers, and has recently been focusing on the bio-based business. With production levels of 5.7 million tons and a turnover of € 4.85 billion as on 31st December 2017, in particular, the company holds market stewardship in manufacturing:

- Intermediates
- Polyethylene
- Styrenics
- Elastomers

We pride ourselves on a wide range of proprietary technologies, an R&D keeping pace with the industry evolution, a comprehensive product portfolio, a wide-reaching distribution network, customized solutions and after-sales assistance. To expand our presence on a global scale, particularly towards new markets, we have developed an internationalization process focusing on making the most of all possible opportunities in order to create synergies while maintaining our constant commitment towards quality and sustainable development for the environment and the communities in the surroundings of our plants.

Versalis (Eni) is Italy's largest chemical company interfacing with markets on the international scene of the basic chemicals, plastics, rubber and, recently, bio-based industry, holding market stewardship in manufacturing intermediates, polyethylene, styrenics and elastomers. With cutting-edge facilities in Italy and Europe and a capillary commercial network, Versalis continues in its development and internationalization through synergies and collaborations in increasingly innovative areas, proving its strong commitment to the environment and to the complete integration with the surrounding communities

Olefine	Aeromatics	Intermediates	Oilfield Chemicals	Polythylene	Styrenics	Elastometrs
Ethylene	Toluene	Phenol	Drilling	LDPE	GPPS	e-SBR
Propylene	o-m-p-Xylene	Acetone	Production	LLDPE	HIPS	s-SBR
Butadiene	Pseudocumene	Alphameti-styrene	Stimulation	VLDPE	EPS	BR
Raffinate 1	DCPD	Cyclohexaone / Ka-Oil	Special Applications	HDPE	SAN	TPR
Carbon Black	Benzene	EB/Styrene		EVA	ABS	EP(D)M

VERSALIS SSBR

Product name	Bound Styrene % wt	Mooney Viscosity ML (1+4) 100 °C	Oil Type P.H.R.	Vinyl Content Wt	Main Applications
EUROPRENE SOL 1205	25	53	–	–	Technical Articles, Cables, Flooring, Adhesives, Bitumen Modification, Hips
Europrene SOL B (Partial Block Types)					
EUROPRENE SOL B 183	11	65	–	–	Manufacture Of Abs And Hips
Europrene SOL R (Random Dry Types)					
EUROPRENE SOL R C2525	26	54	–	24	Low Rolling Resistance Tyre Treads, Mechanical Goods, Footwear
EUROPRENE SOL R X 72616	21	70	–	63	Silica based compounds for premium low rolling resistance summer, all season and winter tyre treads
EUROPRENE SOL R X C2525EP	26,5	53	–	25	Silica and/or Carbon black based compound for high quality technical rubber goods and footwear
EUROPRENE SOL R (RANDOM OIL EXTENDED TYPE)					
EUROPRENE SOL R 72614	25	55	tdae - 37.5	64	Low Rolling Resistance Tyre Treads, Winter Tyre Treads
EUROPRENE SOL R C2564-T	25	50	tdae - 37.5	64	Low Rolling Resistance Tyre Treads With Improved Wet Grip, Mech. Goods
EUROPRENE SOL R C3737	36,5	75	TDAE - 37.5	38	Low rolling resistance tyre treads, high grip HP tyre treads
EUROPRENE SOL R C3737-HV	36,5	75	TDAE - 37.5	43	Low rolling resistance tyre treads, high grip HP tyre treads
EUROPRENE SOL R X 74618	35	60	TDAE - 37.5	58	Tyre tread for HP/UHP tyres. Enhanced bal. b/w grip and rolling resistance
EUROPRENE SOL R X C2460T	25	54	TDAE - 37.5	57	Low rolling resistance tyre treads with improved grip properties; technical rubber goods
EUROPRENE SOL R X C2564T-HM	25	65	TDAE - 37.5	64	Low rolling resistance tyre treads with improved grip properties; technical rubber goods
EUROPRENE SOL R X C3555T	35	75	TDAE - 37.5	55	Tread for HP/UHP tyres. Extremely suitable for high filler loading

Polybutadiene Rubber (BR)

Grades	Cis Content % wt	mooney viscosity ML (1+4) 100 °C	Stabilizer	Main Applications
High Cis Types				
Europrene Neocis BR 40	97	43	non staining	Tyre Tread and Sidewall, Camelback, Conveyor Belts, Technical Goods, Hoses, Golf Balls
Europrene Neocis BR 60	97	63	non staining	
Europrene Neocis BR 450	95	44	non staining	
Low Cis Types				
Intene 50	38	48	non staining	Tyres, Belting, Moulded & Extruded Articles
Intene C 30 AF	38	40	non staining	Tyre Bead Area, Solid Tyres, High Hardness/ resilience Compounds, Moulded And Extruded Articles

VERSALIS EPDM

Duatrol CO (Copolymer)

Product name	Propylene content % wt	Mooney Viscosity ML (1+4) 125 °C (* 100°C)	Ethylene content % wt	Main Applications
DUTRAL CO 033	28	30 (*)		Automotive belts, cables, polymer modification
DUTRAL CO 034	28	44 (*)	72	Cables, appliances, polymer modification, oil viscosity modifier
DUTRAL CO 038	28	60	72	Automotive, cables, appliances, polymer modification, oil viscosity modifier
DUTRAL CO 043	45	33 (*)	55	Automotive, cables, appliances, polymer modification, oil viscosity modifier, bitumen modification
DUTRAL CO 054	41	44 (*)	59	Automotive, cables, mechanical goods, building, bitumen modification, polymer modification, appliances
DUTRAL CO 058	48	80 (*)	52	Appliances, polymer modification, oil viscosity modifier
DUTRAL CO 059	41	79	59	Polymer modification, mechanical goods, building

Dutral OCP (Oil Modifiers)

Product name	Propylene content % wt	Mooney Viscosity ML (1+4) 125 °C (* 100°C)	MFI g/10 min for 230°C (5Kg for PM grades, 2.16Kg for OCP grades)	Main Applications
DUTRAL OCP 2530 PL	34	–	8.5	Oil viscosity modifier
DUTRAL OCP 2550	47	–	8.3	Oil viscosity modifier
DUTRAL OCP 4530 PL	28	31	–	Oil viscosity modifier
DUTRAL OCP 5050	48	60 (*)	–	Oil viscosity modifier

Dutral PM (Polyolefin Modifiers)

DUTRAL PM 06 PLE	–	–	1.8	Polymer modification
DUTRAL PM 8273	–	–	2.4	Polymer modification

VERSALIS EPDM

Dutral TER (Terpolymers)

Product name	Propylene content % wt	Mooney Viscosity ML (1+4) 125 °C (* 100°C)	Ethylene Content % Wt	ENB % Wt Wt % (Phr)	Oil Content	Main Applications
DUTRAL TER 2045	38	33	59	5	-	Automotive, cables, mechanical goods, buildings.
DUTRAL TER 4033	25	30 (*)	70	5	-	Automotive, cables, mechanical goods, high hardness profiles
DUTRAL TER 4038 EP	27	60	69	4.4	-	Automotive, cables, mechanical goods, building, appliances, polymer modification
DUTRAL TER 4039	27	77	69	4.4	-	Automotive, cables, mechanical goods, building, appliances, polymer modification
DUTRAL TER 4044	35	44 (*)	61	4	-	Automotive, cables, mechanical goods, building, appliances
DUTRAL TER 4047	40	55	56	4.5	-	Automotive, mechanical goods, building
DUTRAL TER 4049	40	76	56	4.5	-	Automotive, cables, mechanical goods, building, appliances
DUTRAL TER 4334	27	28	68	4.7	30 (43)	Automotive, cables, mechanical goods, building, appliances
DUTRAL TER 4436	28	43	67	5.5	40(67)	Automotive, mechanical goods, appliances, TPV
DUTRAL TER 4437	32	57	64	4.5	40 (67)	Automotive, mechanical goods, appliances, TPV
DUTRAL TER 4437 WO	32	57	64	4.5	40 (67)	Automotive, mechanical goods, appliances, TPV, building
DUTRAL TER 4535	32	32	65	3.4	50 (100)	Automotive, mechanical goods, building, appliances, cables
DUTRAL TER 4548 (TX 1301)	36	47	60	4.5	50 (100)	Automotive, mechanical goods, appliances, TPV
DUTRAL TER 6148	40	65	53	7	15 (18)	Automotive, mechanical goods, building, appliances
DUTRAL TER 6235	32	33	61	7.4	23 (30)	Automotive, mechanical goods, building, appliances, cables
DUTRAL TER 6537	32	43	60	8	50 (100)	Automotive, mechanical goods, appliances, TPV, building
DUTRAL TER 7040 (TX 1501)	40	87	54	6.5		Building, automotive compact profiles, mechanical goods
DUTRAL TER 9046	31	67 (*)	60	8.9	-	Automotive, mechanical goods, appliances, building
Dutral TER 8148	39	68	53	8.5	17.5(21)	Automotive profile, mechanical goods, building
Dutral 5029 (TX 1601)	25	80	70	5.5		Automotive, cables, mechanical goods, building

EPDM - BTR BRANCHED TER POLYMER

Grades	Propylene content %wt	Mooney Viscosity ML (1+4) 125 °C	Unsaturation Level %wt	Oil content %wt	Physical form	Pack. N°	Main Applications
Dutral® TX 1502 (BTR 4049)	40	76	4.5	-	B	1	Automotive compact profiles, building, mechanical goods
Dutral® BTX 6049 (BTR 6049)	40	85	6	-	B	1	Automotive compact profiles, building, mechanical goods
Dutral® BTX 8148 WO (BTR 8148 WO)	39	75	8.5	17	B	1 2	Automotive sponge and solid profiles, building, mechanical goods
Dutral® BTX 9049 (BTR 9049)	39	90	9.5	-	B	3	Automotive sponge and solid profiles, building, mechanical goods

VERSALIS EVA

Product name	MFI 2, 16 KG	Processing Technology/ Main Use	Additives	Main Application	Vinyl Acetate Content
GREENFLEX ML 50	2,5	INJ	-	Foamed crosslinked sheet for shoes, dolls, mannequins, shock absorbers, gaskets	19,00%
GREENFLEX FD 20	0,5	BFILM	-	Shrink and stretch film for food packaging, deep frozen food packaging	5,00%
GREENFLEX FF 55	0,7	BFILM	-	Greenhouse film, general packaging	19,00%
GREENFLEX FL 55	2,5	BFILM	-	Thin film, lamination film, coextrusion, blends	19,00%
GREENFLEX FL 65	2,5	BFILM	-	Thin film, lamination film, coextrusion, blends	28,00%
GREENFLEX HN 70	6	EXT	-	Base component for hot melt adhesive used in packaging, bookbinding, assembly work, woodworking	28,00%
GREENFLEX MH 40	1,8	INJ	-	Flexible items, foamed crosslinked sheet for shoes	17,00%
GREENFLEX ML 20	2,5	INJ	-	Flexible items, general purpose	7,00%
GREENFLEX ML 21	2,5	INJ	MR	Flexible items, general purpose	6,00%
GREENFLEX ML 30	2,5	INJ	-	Gaskets also for items having food contact, profiles, flexible items	9,00%
GREENFLEX ML 31	2,5	INJ	SL,MR	Gaskets also for items having food contact, profiles, flexible items	9,00%
GREENFLEX ML 40	2,5	INJ	-	Flexible items	14,00%

Thermoplastic Rubber (TPR)

Grades	bound styrene %	structure	BF VISCOCITY	MFI g/10 min	hardness[3] shore A	MAIN APPLICATIONS
STYRENE-ETHYLENE-BUTYLENE (SEBS)						
Europrene SOL TH 2311	30	Linear	500	1	75	General purpose grade for hot melt adhesives, sealants and polymer modification
Europrene SOL TH 2312	30	Linear	1600	<1	75	Compounding, adhesives, polymer modification
Europrene SOL TH 2314	31	Linear	–	<1	70	Compounding
Europrene SOL TH 2315	32	Linear	–	<1	68	Compounding

WACKER

WACKER is one of the world's leading and most research-intensive chemical companies. In 2017, it generated sales of around € 4.92 billion. Products range from silicones, binders and polymeric additives for diverse industrial sectors from bioengineered pharmaceutical actives to hyperpure silicone for semiconductor and solar applications. As a technology leader focusing on sustainability, WACKER promotes products and ideas that offer high value-added potential to ensure that current and future generations enjoy a better quality of life based on energy efficiency and protection of the climate and environment.

Spanning the globe via 4 business divisions, 23 production sites and over 100 subsidiaries and sales offices in 31 countries, WACKER has established a presence in all key economic regions and growth markets. With a workforce of some 13,811 employees, WACKER sees itself as a reliable innovation partner that develops trailblazing solutions for, and in collaboration with, its customers. Our technical centres employ local specialists, who assist customers worldwide in development of products tailored to regional demands, supporting them during every stage of their complex production processes, if required.

WACKER e-solutions are online services provided via our customer portal and as integrated process solutions. Our customers and business partners thus benefit from comprehensive information and reliable service to enable projects and orders to be handled fast, reliably and efficiently.

WACKER SILICONES
WACKER POLYMERS
WACKER BIOSOLUTIONS
WACKER POLYSILICON

Product Name	Product group	Product Type	Silicone concentration [%]	Fluid viscosity cps	Solid Content	pH
Fluid 100	Dimethicone	Fluid		100		
Fluid 350	Dimethicone	Fluid		350		
Fluid 1000	Dimethicone	Fluid		1000		
WACKER Silicone HS	Dimethicone	Emulsion	22	<1500	24 - 27	6.0-8.0
WACKER E 41 M	Dimethicone	Emulsion	33	<100	>35	6.0-9.0
WACKER E 74M	Dimethicone	Emulsion	35	<100	34 - 38	6.0-9.0

FARIDA 方锐达

Hunan Farida Technology Co., Ltd., one of the high & new Tech enterprises in Hunan Province, is located in Changsha National Biomedical Industrial Base, which is 15km away from Changsha Huanghua International Airport. The company mainly engages in Research and Development, Production and Sales of products such as vulcanizing agents, crosslinking agents, flame retardants, blowing agents, sodium cyanate and others.

TECHNICAL DATA SHEET OF FARIDA TAIC - P (70%)

Application	It is an outstanding and new type crosslinking coagent for Polyolefines including Polyetylene, Polypropylene, Chlorinated Polyethylene, EVA, EPDM, etc.. It is powdered from liquid TAIC, but with much more improved qualities over liquid TAIC as following: 1) Easier handling in processing; 2) Better dispersion into polyolefines in kneading.

TECHNICAL DATA SHEET OF FARIDA TMPTMA

Application	FARIDA TMPTMA is widely used as the active co-agent for a variety of special rubbers and thermoplastics (such as EPR, EPDM, FRM, silicon rubber, EVA and CPE), the insulating material for microleltronics products, the crosslinking agent for specialion-exchange resins, and the impact modifier and monomer for copolymers, etc.. It not only can reduce the curing time and increase the curing and crosslinking density significantly, but also can reduce to dosage of DCP, and For powdery improve the mechnical and optical properties, the resistance to abrasion, heat moisture, weather, solvent, impact, radiation, oxidation, corrosion and fire and the electrical insulation properties of products. FARIDA TMPTMA is widely used especially in the field of irradiation crosslinking.

Specification

Product	FARIDA TMPTMA	FARIDA TMPTMA-P
Appearance	Colorless or pale yellow liquid	white powder
Viscosity (CPS,25°C)	35-50	N/A
Acid value (mgKOH/g)	Max.0.2	N/A
Hue (Pt-Co)	Max.50	N/A
Water (%)	Max.0.2	N/A

TECHNICAL DATA SHEET OF FARIDA TAIC - S (LIQUID-100%)

Application	Widely used as crosslinking coagent, modifier and assistant vulcanizer for thermoplastics, ionexchange resin, special rubber and other polymer materials, esp. EVA, EPDM, PE, etc.. It is also an intermediate (additive) of photocurable coating, photoresists and flame retardant. TAICS is crosslinking agent for solar cell EVA encapsulated film.

LG Chem

Company Leading the Chemical Industry in Korea – LG Chem

Having continued to grow over 7 decades since founded in 1947, LG Chem is literally the company leading the chemical industry in Korea. The company has built the global network for production, sales and R&D not only in Korea but also in main bases across the world and has provided globally competitive products

EVA ETHYLENE VINYL ACETATE

Category	Grade	Property						
		VA Content	Melt Index	Density @ 23°C	Melting temp.	Tensile Strength at break	Ultimate Elongation	Hard -ness
	ASTM	D1505	D1238	D1505	LG	D638	D638	D2240
	Unit	g/cm³	g/10min	g/cm³	°C	kg/cm²	%	D SCALE
Form	EC28003	28	3	0.951	74	150	800	80
	ES28005	28	5	0.951	72	120	800	78
Wire & Cable	EC28005	28	5	0.951	72	120	800	78
	EC33018	33	18	0.960	62	100	850	62
PVEN	EP28015	28	18	0.950	71	110	950	78
	EP28025	28	25	0.950	69	95	850	76
Hot Melt	EA19150	19	150	0.940	80	70	800	88
	EA19400	19	400	0.939	78	50	850	85
	EA28015	28	18	0.950	71	130	900	78
	EA28025	28	25	0.950	69	120	850	76
	EA28025A	28	25	0.950	69	120	850	76
	EA28150	28	150	0.946	70	40	900	74
	EA28400	28	400	0.945	68	25	900	68
	EA33045	33	45	0.960	62	45	950	62
	EA33400	33	400	0.955	60	15	1,000	57
	EA40055	40	55	0.967	53	48	1,350	46

POE Polyolefin Elastomers / Lucene™

Category	Grade	Property					
		Melt Index	Density @ 23°C	Melting Temp.	Hard -ness	Tensile Strength at break	Mooney viscosity ML1+4 @121°C
	ASTM	D1238	D1505	LG	D2240	D790	D1646
	Unit	g/10min	g/cm³	°C	A SCALE	MPa	MU
EOR (Ethylene Octene Copolymer)	LC160	0.5	0.863	46	57	10	36
	LC161	0.5	0.868	54	67	13	35
	LC170	1.1	0.870	58	71	14	23
	LC670	5.0	0.870	58	70	13	9
	LC180	1.2	0.885	73	86	30	20
	LC100	1.2	0.902	100	91	83	23
38EBR (Ethylene Butene Copolymer)	LC168	1.2	0.862	32	46	8	20
	LC175	1.1	0.870	42	63	12	18
	LC565	5.0	0.865	36	54	8	8
	LC875	35	0.870	60	60	11	< 1

Category	Grade	Property				Application
		Tensile strength at break	Elongation at break point	Tear strength type C	Glass transition temp.	
	ASTM	D1505	D1238	D1505	LG	
	Unit	g/cm³	g/10min	g/cm³	°C	
EOR (Ethylene Octene Copolymer)	LC160	6.1	> 900	33	-56	Automotive in/exterior pasts Sound isolation Shoe sole Wire & Cable
	LC161	9.4	> 900	38	-53	
	LC170	9.5	> 900	40	-53	
	LC670	5.5	> 900	38	-55	
	LC180	25	> 800	58	-45	
	LC100	38	> 600	83	-31	
EOR (Ethylene Butene Copolymer)	LC168	1.8	> 800	17	-58	Automotive in/exterior pasts Sound isolation Shoe sole Wire & Cable
	LC175	4.4	> 900	34	-53	
	LC565	1.8	500	20	-53	
	LC875	1.9	> 450	14	-58	

NBR

Grade	Phase	Colors	ML (1+4) @ 100°C	AN Contents (%)	BASIC PROPERTIES	APPLICATIONS
7150	Bale	Light Yellow	51	Med AN (28.5)	Cold Resistant Elasticity	Packing / Hose
6230	Bale	Light Yellow	33	Med High AN (34.0)	Processability Oil Resistance	Packing / Roll
6240	Bale	Light Yellow	41	Med High AN (34.0)	Processability Oil Resistance	Packing / Roll / Belt
6250	Bale	Light Yellow	51	Med High AN (34.0)	Processability Oil Resistance	Packing / Roll / Mat
6260	Bale	Light Yellow	60	Med High AN (34.0)	Processability Oil Resistance	Hose / Packing
6280	Bale	Light Yellow	80	Med High AN (34.0)	Filler Acceptability Elasticity	Packing / Hose/ Foaming
6840	Bale	Light Yellow	41	Med High AN (34.0)	Low Mould Fouling Elasticity	Packing / Roll
6850	Bale	Light Yellow	50	Med High AN (34.0)	Low Mould Fouling Elasticity	Sole / Packing/ Foaming
3250	Bale	Light Yellow	55	High AN (41.5)	Processability Oil Resistance	Sole / Hose/ Mat
3280	Bale	Light Yellow	80	High AN (41.5)	Processability Oil Resistance	Hose / Packing
3445	Bale	Light Yellow	45	Med High AN (34.0)	Low Mould Fouling Fast Cure, Electricity	Hose / Packing
2860	Bale	Light Yellow	60	Low AN (28.0)	Cold Resistance Elasticity, Fast Cure	Hose / Packing / Foaming
2875	Bale	Light Yellow	75	Low AN (28.0)	Filler Acceptability Elasticity	Hose / Foaming
2255	Bale	Light Yellow	55	Low AN (22.0)	Low Temp Application	Hose / Belt
8300	Powder	White	57	Med High AN (32.0)	Partially Cross Linked	PVC Modifier /Brake Pad
7030 (L.H)	Sheet	--	60 (60, 75)	34.0 Base Polymer	Ozone Resistance	Sole/Hose/Cable Belt

HUNTSMAN
Enriching lives through innovation

WE ENABLE YOU TO MAKE YOUR FOOTWEAR COMFORTABLE LIGHTER DURABLE CIRCULAR

DALTOPED® Series

Polyether PU System for Midsole, Unitsole & Outsole

HUNTSMAN
Enriching lives through innovation

Huntsman's wide and varied range of polyurethane and thermoplastic polyurethane (TPU) solutions help footwear companies get to market faster. To meet the high demands and rapidly changing trends in the footwear market, we focus our innovation efforts on sustainable solutions, automation, customization and smart manufacturing. We provide fully formulated grades and tailor-made systems, building long-term partnerships with our customers based on knowledge, trust and experience. With locations around the world, our international network of footwear specialists combines global reach with local knowledge.

Huntsman has a long and proud history of helping customers develop innovative new products to create unique designs. Our AVALON®, DALTOPED® and SMARTLITE® ranges of PU, TPU and expanded TPU products have helped manufacturers redefine what's possible in footwear performance and aesthetics. Today, we continue to develop new PU and TPU technologies which raise standards, meet higher expectations and keep footwear manufacturers ahead of the game. Alongside our customers, we work closely with industry associations, universities and research centers to stay ahead of the latest innovations and market developments. In addition, we establish partnerships with machine and equipment manufacturers in order to provide solutions for the future. It helps us keep on top of industry issues in the widest sense so we are able to provide solutions that are both sustainable and that meet the necessary regulatory standards in different parts of the world

Application	Grades	Features	Properties
Casual Footwear	DALTOPED FF 55850 DALTOPED 55855	✓ Low density ✓ BIS Compliant ✓ Good Mechanical properties ✓ Excellent surface finish ✓ Versatile across various machines	• Density (Kg/m3) : 360- 380 • Hardness (Shore A): 50+/-2
	DALTOPED FF 55750	✓ Low density ✓ BIS compliant ✓ Good Mech. & surface finish	• Density (Kg/m3) : 360- 380 • Hardness (Shore A): 50+/-5
	DALTOPED AF 35450	✓ Ultra low density ✓ BIS Compliant ✓ Good Mechanical properties ✓ Excellent surface finish	• Density (Kg/m3) : 350 • Hardness (Shore A): 45+/-5
Safety Footwear	DALTOPED 66860	✓ Single Density Safety Outsole ✓ High durability ✓ Excellent bonding	• Molded Density : 0.55~0.60gm/cm3 • Hardness : 55- 60 Shore A • Tensile Strength > 6 MPA
	DALTOPED 54806	✓ Double density Safety midsole ✓ High durability	• Molded density - 0.45gm/cm3 • Hardness : 42~ 47 Sh. A • Tensile > 4 MPA
	DALTOPED 16808	✓ Double density Safety midsole ✓ High durability	• M.D- 0.95~1.0gm/cm3 • Hardness : 60~70 Sh.A • Tensile > 6 MPA
Double Density Footbed	DALTOPED 33100	✓ Excellent Rebound ✓ Shock absorbing ✓ Durable(High tear)	• Density : 0.33~0.36 g/cc • Hardness:30-38 Ask. C • Compression set <8%
	DALTOPED 32100	✓ Low Density ✓ Extra Soft ✓ Light Weight	• Density 0.30~0.33g/cc • Hardness:15-20 Ask. C • Compression set <10%
	DALTOPED 32802	✓ Low Density ✓ Light Weight ✓ Good Cushioning	• Density : 0.28g/cc • Hardness:25-30 Ask. C • Compression set <8%
	DALTOPED 36510	✓ Light Weight ✓ Premium Cushioning ✓ Balanced Rebound	• Density : 0.32~0.35 g/cc • Hardness:25-30 Ask. C • Compression set <8%
Outsole	AVALON 65	✓ High Abrasion Resistance ✓ Excellent Flexibility	• Density : (g/cm*3) : 1.18 • Hardness (Shore A) : 65 • Tensile Strength (MPa) : 25

INTRODUCTION

TWC GROUP, a chemical major headquartered in Kolkata, India provides solutions in areas of Rubber Processing, Rubber to Reinforcement bonding, Rubber functionalization and ozone Resistance.

A technology leader in speciality chemicals in the Indian sub-continent, our products are used in companies across the globe. In over 35 countries around the world, companies make use of our business-to business solutions for eco-friendly and cost efficient operation.

DRY BONDING SYSTEM - ADHESION PROMOTER

RESORCINOL DISPERSIONS

Product	Appearance	Composition	Specific Gravity @ 25°C	Active Content (%)	Ash Content (%)	Moisture Content (%)
TECHNIC® RSB11	White to Red Brown Powder	Resorcinol and Precipitate Silica Blend	1.56	50 ± 2	46 ± 2	3.50 max
TECHNIC® RL	Orange to Red Brown Liquid	Resorcinol and HMMM	1.20	91 ± 2	NIL	3 max
TECHNIC® RDL	White to Brown Powder	Resorcinol, HMMM & Silica Blend	1.50	66 ± 2	30 ± 3	3 max

Product	Appearance	Composition	Specific Gravity @ 25°C	Active Content (%)	Softening Point (°C)	Moisture Content (%)
RUBBOND RSA	Off White Grey to Red Brown Flakes	Resorcinol and Stearic Acid Melt	1.10 - 1.30	67 ± 2 *	100 - 110	0.30 max

RESORCINOL RESINS

Product	Appearance	Composition	Specific Gravity @ 25°C	Softening Point (°C)	Free Resorcinol (%)	Moisture Content (%)
TECHNIC® B18S	Orange Red to Brown Pastilles	Resorcinol Formaldehyde Resin	1.36	100 - 110	18 max	1 max
TECHNIC® B19S	Orange Red to Brown Pastille	Resorcinol Formaldehyde Resin	1.36	100 - 114	15 max	1 max
TECHNIC® B20S	Dark Red to Brown Pastille	Modified Resorcinol Formaldehyde Resin	1.24	99 - 109	5 max	0.70 max
TECHNIC® B24S	Dark Red - Brown	Modified Resorcinol Formaldehyde Polymer	1.24	90 - 100	0.1 max	0.70 max
TECHNIC® B22Z	Dark Red to Brown Pastille	Modified Resorcinol Formaldehyde Resin	1.20	100 - 110	0.10 max	0.70 max

HMMM RESIN & DISPERSIONS

Product	Appearance	Composition	Specific Gravity @ 25°C	Active Matter (%)	Ash Content (%)	(%) Free Formaldehyde
RUBBOND HM100	Clear Viscous Liquid	Hexa Methocy Methylol Melamine (HMMM) Resin	1.20	98	NIL	0.10 max
RUBBOND HM72C	Free Flowing Powder	72% HMMM on Calcium Silicate	1.41	72 ± 1	25 ± 4	0.10 max
RUBBOND HM72	Free Flowing Powder	72% HMMM on PPT Silica	1.41	72 ± 1	26 ± 3	0.10 max
RUBBOND HM65O	Free Flowing Powder	65% HMMM on PPT Silica & Oil	1.41	65 ± 1	28 ± 2	0.10 max
RUBBOND HM65	Free Flowing Powder	65% HMMM on PPT Silica	1.41	65 ± 1	33 ± 2	0.10 max
RUBBOND HM50	Free Flowing Powder	Silica 50% HMMM on PPT	1.41	50 ± 1	45 ± 2	0.10 max

OPERATIONAL FACILITIES

TWC GROUP Manages 4 state-of-the-art manufacturing facilities, namely;

- Techno Waxchem Pvt. Ltd., Unit 1 & Unit 2 in Kolkata, East of India
- Rajsha Chemicals Pvt. Ltd., Unit 1 & Unit 2 in vadodara, West of India

Managing 32,000 TPA of production capacity.

Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
12 months	15 kgs	4 - 5 phr	Resorcinol dispersed on carriers is designed to give easier mixing in rubber compounds.
6 months	25 kgs	3 - 4 phr	Single Component Bonding System with both Resorcinol & Methylene Donor present. Ideal for Hose Application.
12 months	25 kgs	3 - 4 phr	Single Component Bonding System with both Resorcinol & Methylene Donor dispersed on Silica.

Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
12 months	25 kgs	4 - 5 phr	* Other variation of 75% & 80% Active content is also available.

Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
2 years	25 kgs	3 - 4 phr	It is a reaction product of Resorcinol with Formaldehyde, reducing the free monomer content. Good for both tyre cord and brass plated tyre cord adhesion to rubber.
2 years	25 kgs	3 - 4 phr	
2 years	25 kgs	3 - 4 phr	Low Free Resorcinol, very low fuming. Very suitable for steel cord adhesion. cord adhesion
2 years	25 kgs	3 - 4 phr	Formaldehyde-free resorcinol for dry bonding, ensuring strong adhesion and excellent flex-fatigue resistance in rubber-to-tyre cords.
2 years	25 kgs	3 - 4 phr	Very Low Free Resorcinol, no fuming at all. Very suitable for steel cord adhesion

Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
12 months	200 kgs	3 - 4 phr	HMMM Methylene Donor is expected to provide abour 5 - 6 formaldehyde group to make cross-linking reactions with Resorcinol bonding system in rubber compounds.
12 months	25 kgs	4 - 5 phr	HMMM improves processability of uncured rubber compounds. It enhances the
12 months	25 kgs	4 - 5 phr	physical, mechanical and dynamic properties of cured rubber compounds. It helps in maintain higher levels of adhesion after heat, humidity, steam and salt water ageing of
12 months	25 kgs	4 - 5 phr	rubber compounds. HMMM does not produces ammonia from the curing reaction and therefore, it is the methylene donor of choice for polyster and brass-coated steel cords
12 months	25 kgs	4 - 5 phr	reinforced rubber compounds. HMMM is a liquid material, for ease of handling it is dispersed on Silica, for handling ease.
12 months	25 kgs	4 - 5 phr	

HMT DISPERSIONS

Product	Appearance	Composition	Specific Gravity @ 25°C	Active Content (%)	Ash Content (%)	Moisture Content (%)	Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
RUBBOND SCH	Free Flowing White Powder	Hexa Methylene Tetramine on Carrier	1.27	97 min	3 max	0.50 max	12 months	25 kgs	2 - 4 phr	It offers a balanced combination of good adhesion and excellent flex fatigue resistance in conjunction with Resorcinol donor through formation of an in-situ resin during rubber processing. Ideally it is added in the last stage of mixing with Sulphur & Accelerators.
RUBBOND OSCH	Free Flowing White Powder	Hexa Methylene Tetramine on Carrier & Oil	1.27	90 min	4 max	0.60 max	12 months	25 kgs	2 - 4 phr	

SUPER TACKIFIER RESIN

Product	Appearance	Composition	Specific Gravity @ 25°C	Softening Point (°C)	Ash Content (%)	Moisture Content (%)	Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
TECHNIC® KR140	Yellow to Brown Pastille	p-tert-butylphenol Acetaldehyde Resin	1.00 - 1.06	135 - 150	1 max	0.70 max	2 years	25 kgs	2 - 4 phr	Super Tackifier for initial high tack and longer term tack retention. Very suitable for SBR compounds with higher dosage of Silica.
TECHNIC® TR140	Yellow to Brown Pastille	p-tert-butylphenol Formaldehyde Resin	1.00 - 1.06	135 - 145	1 max	0.70 max	2 years	25 kgs	2 - 4 phr	High Performance Tackifier for initial high tack and long term tack retention.

TACKIFIER RESIN

Product	Appearance	Composition	Specific Gravity @ 25°C	Softening Point (°C)	Ash Content (%)	Heat Loss (%)	Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
TECHNIC® TR100	Yellow to Brown Pastille	p-octylphenol Formaldehyde Resin	1.00 - 1.04	95 - 105	1 max	0.50 max	2 years	25 kgs	2 - 10 phr	General purpose Tackifier Resin for all purpose. It gives excellent initial tack. Suitable for all type of rubbers.

REINFORCING PHENOLIC RESIN

Product	Appearance	Composition	Specific Gravity @ 25°C	Softening Point (°C)	Ash Content (%)	Free Phenol (%)	Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
RUBBOND RR90	Pastille	CNSL Modified Phenol Formaldehyde Resin	1.10	80 - 105	0.50 max	2 max	1 year	25 kgs	-	It improves hardness, tear resistance, abrasion resistance, tensile strength, reduce Mooney Viscosity and prolonged scorch time properties in rubber compound. CNSL, Tall Oil & Alkyl-Phenol modification of PF Resin are expected to have better compatibility with rubber compounds so that accelerated filler dispersions with improved processability of rubbers could be achieved. To avoid pre-vulcanisation and also to achieve good scorch properties, these resins are to be added as Methylene Acceptors in the first stage with a Methylene Donors like HMMM or HMT in the final stage along with Sulphur & Accelerators.
RUBBOND RR95	Pastille	Tall Oil Modified Phenol Formaldehyde Resin	1.05	90 - 105	0.50 max	2 max	1 year	25 kgs	-	
RUBBOND RR110	Pastille	Phenol Formaldehyde Resin	1.10	90 - 120	0.50 max	2 max	1 year	25 kgs	-	
RUBBOND RR160	Pastille	Alkyl-Phenol modified Phenol Formaldehyde Resin	1	101 - 113	0.10 max	1 max	1 year	25 kgs	-	

CUT & CHIPPING RESISTANCE

Product	Appearance	Composition	Specific Gravity @ 25°C	Softening Point (°C)	Ash Content (%)	Iodine Value	Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
TECHNIC® CCR120	Pastilles	Modified DCPD, Rosin Co-Polymer	1.07	120 - 130	0.50 max	115 - 135	2 years	25 kgs	2 - 4 phr	CCR resin provides high tensile, high elongation at break, good dynamic stiffness and elongation tear strength properties, resulting in improvement of cutting, chunking & chipping of tire treads.

RESORCINOL DIPPING RESIN

Product	Appearance	Composition	Specific Gravity @ 25°C	Solids Content (%)	Free Resorcinol (%)	pH	Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
TECHNIC® R75	Orange Red Viscous Liquid	Resorcinol Formaldehyde Resin in Aqueous Solution	1.20	75	14 - 16	0.50 - 1.50	6 months	200 kgs	-	RFL dips prepared from the pre-formed RF Resin solutions showed better adhesion performance in nylon, aramid & polyester tire cords. R0 & R75 can directly be added to the latex withour ageing. Due to low viscosity of R50 resin solution, pumping is easy.The final RFL Dlps prepared using R50 & R75 have consistent quality for providing better adhesive performance in synthetic tire cords.
TECHNIC® R50	Orange Red Liquid	Resorcinol Formaldehyde Resin in Aqueous Solution	1.17	50	9 - 10	1.00 - 2.00	6 months	200 kgs	-	

HMT DISPERSIONS

Product	Appearance	Composition	Specific Gravity @ 25°C	Active Content (%)	Ash Content (%)	Moisture Content (%)	Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
RUBBOND SCH	Free Flowing White Powder	Hexa Methylene Tetramine on Carrier	1.27	97 min	3 max	0.50 max	12 months	25 kgs	2 - 4 phr	It offers a balanced combination of good adhesion and excellent flex fatigue resistance in conjunction with Resorcinol donor through formation of an in-situ resin during rubber processing. Ideally it is added in the last stage of mixing with Sulphur & Accelerators.
RUBBOND OSCH	Free Flowing White Powder	Hexa Methylene Tetramine on Carrier & Oil	1.27	90 min	4 max	0.60 max	12 months	25 kgs	2 - 4 phr	

OZONE PROTECTION WAXES

Product	Appearance	Composition	Specific Gravity @ 25°C	Congealing Point (°C)	N-Paraffin Content	C Max	Ash Content (%)	Shelf Life	Packaging	Function & Application
RUBWAX 1242	White to Light Yellow Pastilles	Blend of Paraffin Waxes and Microcrystalline Waxes	0.92	70 -78	65 - 75	24 - 26 31 - 33	0.10	2 Years	25 kgs	Protection against Ozone attack, especially in a very low and very high temperature
RUBWAX 1244	White to Light Yellow Pastilles	Blend of Paraffin Waxes and Microcrystalline Waxes	0.92	64 - 70	75 - 85	31 - 33	0.10	2 Years	25 kgs	Protection against Ozone attack, especially in a temperature range of 10 - 50 °C
RUBWAX 1250	White to Light Yellow Pastilles	Blend of Paraffin Waxes and Microcrystalline Waxes	0.92	64 - 68	60 - 70	30 - 32	0.10	2 Years	25 kgs	Protection against Ozone attack, especially in a temperature range of 10 - 50 °C
RUBWAX 1252	White to Light Yellow Pastilles	Blend of Paraffin Waxes and Microcrystalline Waxes	0.91	60 - 69	60 - 85	30 - 32	0.10	2 Years	25 kgs	Protection against Ozone attack, especially in a temperature range of 10 - 50 °C
RUBWAX 1253	White to Light Yellow Pastilles	Blend of Paraffin Waxes and Microcrystalline Waxes	0.92	64 - 70	72 - 79	24 - 26 31 - 33	0.10	2 Years	25 kgs	Protection against Ozone attack, especially in a very low and very high temperature

HOMOGENISING AGENT

Product	Appearance	Composition	Specific Gravity @ 25°C	Softening Point (°C)	Ash Content (%)		Shelf Life	Packaging	Recommended Dosage (phr)	Function & Application
RUBBOND 40	Black Pastille	Aromatic Hydrocarbon Resin	1.04	96 - 106	2 max		1 year	25 kgs	2 -5 phr	It improves mould flow and extrusion properties. Reduces nerve and shrinkages, improves homogenity of elastomers and fillers. Reduces mixing cycle time, energy consumption and viscosity. Enhances Green Tack

PROCESS ADDITIVES - ACTIVATORS, ZINC BASED

Product	Appearance	Composition	Specific Gravity, g/cm3	Dropping Point, °C	Ash Content (%)	Zinc Content (%)	Shelf Life	Packing	Dosage (phr)	Function & Application
RUBBER AID - ZA73	Grey White - Creamish Pastilles / Flakes	Mixture of Zn soaps of Aliphatic and Aromatic Carboxylic Acids	1.24 ± 0.05	110 ± 7	20 ± 2	17 ± 1	2 years	25 kgs	2 - 5	An effective activator for the sulfur vulcanization of diene rubbers, especially natural rubber and improves rubber compound modulus. An effective physical peptizer for the mastication of NR, also improves processability in mixing, extrusion and molding.
RUBBER AID - ZA74	White – Creamish Pastilles/ Flakes	Mixture of Zn soaps of Aliphatic and Aromatic Carboxylic Acids	1.10 ± 0.02	100 ± 5	16 ± 2	13 ± 1	2 years	25 kgs	2 - 4	An effective physical peptizer for NR compounds. Can offer cure activation for increased reversion stability, processability and compound flow.
RUBBER AID - ZEH	Highly Viscous Yellowish Liquid	Zinc 2-Ethylhexanoate	1.16 ± 0.05	N.A	27 ± 2	23 ± 1	2 years	200 kgs	1 - 3	It is a rubber soluble zinc soap and could be used as an activator for NR. It offers heat stability (reversion resistance) in NR compounds containing normal levels of sulfur, particularly with thiazole type accelerators.

PROCESS ADDITIVES – DISPERSANTS for SILICA, ZINC BASED

Product	Appearance	Composition	Specific Gravity, g/cm3	Dropping Point, °C	Ash Content (%)	Zinc Content (%)	Shelf Life	Packing	Dosage (phr)	Function & Application
RUBBER AID - PA44	Beige to Creamish Pastilles/ Flakes	Mixture of Zinc and Alkali Soaps	1.10 ± 0.05	100 ± 5	13 ± 1	8.50 ± 0.50	2 years	25 kgs	2 - 3	Excellent flow promoter for rubber compounds with high level of white fillers, namely, silica, chalk, clay, et. It improves dispersion of fillers (especially minerals fillers) and has beneficial influence on batch-to-batch uniformity. Rubber Aid – PA 44 A decreases the tendency of re-agglomeration of silica. It is suitable for better extrusion and also, could be suitable for compression, transfer and injection molding applications. It could be useful as processing aid in the production of radial tires, rubber belts and cables.
RUBBER AID - PA44A	Beige to Creamish Pastilles/ Flakes	Blend of Fatty acid Derivatives (Mainly Zn)	1.07 ± 0.05	95 ± 5	10 ± 1	8.50 ± 0.50	2 years	25 kgs	2 - 3	
RUBBER AID - PA46F	Beige - Light Brown – Off White Pastilles	Blend of Fatty acid Derivatives	1.03 ± 0.05	78 - 92	7.50 ± 1	5 ± 1	2 years	25 kgs	1 - 5	Designed for high performance silica-loaded rubber compounds. Beneficial for use in high performance tires containing NR, BR, SSR, S-SSR rubbers. Improves processing and extrusion of silica loaded rubber compounds and stabilizes viscosities during extended storage conditions.
RUBBER AID - PA49	Beige - Light Brown – Off White Pastilles	Blend of Fatty acid Derivatives	1.07 ± 0.05	112.50 ± 7.50	10 ± 5	8.50 ± 1	2 years	25 kgs	1 - 5	Expected to reduce viscosity and improve extrusion rate in silica filled rubber compounds. Improves downstream processing while enhancing the physical properties in silica based natural and synthetic rubber compounds. Can be used with silane coupling agents and expected to exhibit synergistic effect and improves the compound properties. Could be useful in injection and transfer molding, and also for continuous vulcanization due to its ability to stabilize vulcanization at high temperatures.
RUBBER AID - PA50	Beige to Brown Pastilles / Flakes	Zn Soaps of Un-Sat. Fatty Acids	1.10 ± 0.05	103 ± 6	14.50 max	14.50	2 years	25 kgs	3 - 5	

PROCESS ADDITIVES – DISPERSANTS for SILICA, ZINC BASED

Product	Appearance	Composition	Specific Gravity, g/cm3	Dropping Point, °C	Ash Content (%)	Zinc Content (%)	Shelf Life	Packing	Dosage (phr)	Function & Application
RUBBER AID - PA50P	Beige to Brown Pastilles / Flakes	Zinc Soaps of Mixed Fatty Acid	1.05 ± 0.05	100 ± 5	13 ± 1	10.50 ± 0.50	2 years	25 kgs	1 - 5	It is rubber stable and does not bloom from the vulcanizates due to wide solubility range. Helps in the mastication, mixing and proper dispersion of fillers in NR mixed with PBR, SBR and NBR rubbers and rubber compounds.
RUBBER AID - PA50T	Beige to Brown Pastilles / Flakes	Zinc Soap of Mixed Fatty Acids with Lubricants	1.00 ± 0.05	97 ± 5	10.20 ± 1	8.50 ± 0.50	2 years	25 kgs	2 - 5	Could act as lubricant and can exhibit reducing effect on viscosity, facilitate mixing and processing of various rubbers. Saves energy by cooler mixing process and lower viscosities.
RUBBER AID - PA60	Beige Pastilles / Flakes	Mixture of Zinc Soaps of Higher Molecular Weight Fatty Acids	1.15 ± 0.05	90 ± 6	20 ± 2	8.50 ± 0.50	2 years	25 kgs	1 - 5	The double bonds present in it could stabilize free radical formation, which in turn could improve reversion resistance and tear strength of rubber compounds. Can be used to lower power consumption during mixing cycle, dumping temp, Mooney viscosity and improve filler dispersions.
RUBBER AID - PA60T	Beige to Off White Pastilles / Flakes	Mixture of Zinc Soaps of High-Molecular Fatty Acids	1.05 ± 0.05	75 - 95	12 – 14	10.50 ± 1.00	2 years	25 kgs	1 - 3	Shortens the mixing time and improves the flow characteristics of the uncured compound. Improves mixing and thus enhances the incorporation of compound ingredients, and also improves flow and reduces heat build-up during extrusion process.
RUBBER AID - PA70	Beige - Light Brown Pastilles	Blend of Zinc Soaps of Unsaturated Fatty Acids and Esters	1.10 ± 0.05	95 - 110	15.50 – 17.50	8.50 ± 0.50	2 years	25 kgs	3 - 5	Fast incorporation and improves dispersion of the silica without sacrifice in wet skid resistance could be achieved. Could facilitate flow property compared with common zinc soaps as well as increased energy savings in the mixing step.
RUBBER AID - PA276	Beige to Brown Pastilles / Flakes	Blends of FA Soaps mainly Aliphatic in Nature	1.10 ± 0.05	100 ± 5	15 - 17	13 ± 1	2 years	25 kgs	2 - 4	Developed specifically for use in compounds containing high loadings of fillers, particularly with high surface area silicas. Reduces compound viscosity and enhances flow property during extrusion, which could lead to improved processability. Expected to reduce the degree of filler-to-filler re-agglomeration, known as storage hardening, in silica containing rubber compounds.

PROCESS ADDITIVES – DISPERSANTS for SILICA, ZINC FREE

Product	Appearance	Composition	Specific Gravity, g/cm3	Dropping Point, °C	Ash Content (%)		Shelf Life	Packing	Dosage (phr)	Function & Application
RUBBER AID - ZF254/254M	Beige / Yellowish / Creamish Pastilles	Blend of Substituted Fatty Acid Amides	1.01 ± 0.05	70 - 90	< 0.01		2 years	25 kgs	2 - 3	A zinc free processing additive developed for highly filled silica compounds. Reduces the tendency of re-agglomeration of filler particles, particularly silica. Maintains low viscosity during compound storage with good extrusion and does not influence on cured compound dynamic properties.
RUBER AID - ZF212	Lt. Tan / Off White / Pastilles	Blend of Fatty Acid Derivatives in an Inert Carrier	1.10 ± 0.05	60 ± 5	20 ± 2		2 years	25 kgs	2 - 5	Could prevent sticking of rubbers and compounds to rotors and rolls and its addition can reduce the risk of scorching in highly loaded rubber compounds. Improves the flow properties of the rubber compound, which could result in foiling the molds faster and under lower pressure, particularly useful in injection and transfer molding operations. Improves the dispersibility of highly active white fillers and other ingredients.
RUBBER AID - ZF16	Beige to Brown Pastilles / Flakes	Mixture of Fatty Acid Soaps, predominantly Calcium	1.00 ± 0.05	96 - 108	3 to 7		2 years	25 kgs	1 - 5	> Improves flow properties of polymeric compounds by reducing viscosity and promoting slippage at the rubber-to-metal interface, which could lead to higher extrusion rates, improved dimensional stability and a constant level of die swell. > Eliminates sticking to rotors in internal mixers or open mills and calendar rolls. > An activating effect on the cross-linking rate of sulfur cross- linked polymer / rubber compounds. > Improves EPDM flow and release characteristics in injection and extrusion processes.
RUBER AID - ZF42	Lt. Beige / Yellow / Brown / Pastilles	Blends of Fatty Acid Derivatives	1.00 ± 0.05	90 ± 7	1 max		2 years	25 kgs	1 - 5	It provides very good lubricating effects and helps to improve flow and mould release. Can be incorporated both in the internal mixer or on the mill and is recommended to add this additive with the fillers.
RUBBER AID - ZF222	Lt. Tan / Off White / Yellow / Pastilles	H.M Wt Fatty Acid Esters and Condensation Products	1.00 ± 0.05	55 - 70	0.20 max		2 years	25 kgs	2 - 4	Exhibits good plasticizing properties and highly effective in polar NBR rubber compounds. Improves the flow and release properties. Prevents sticking of elastomers and rubber compounds to rotors and rolls and can reduce the risk of scorching in highly loaded compounds.
RUBER AID - ZF80	Beige / Yellowish / Off White / Pastilles	Blend of Fatty alcohols, Salts of Fatty Acids and Lubricants	0.95 ± 0.05	105 - 115	2.50 – 3.50		2 years	25 kgs	1 - 5	In comparison to other processing additives, it exhibits better compatibility with most polymers used in rubber industry and, could show excellent affinity to the commonly used fillers like silica, carbon black, chalk or calcined clay.

合盛硅业
HOSHINE SILICON

Hoshine Silicon Co., Ltd. is the core industry of Ningbo Hoshine Group. It specializes in silicon metal, polysilicon, silicone and silicon-based technology, and is the largest silicon metal producer in the world with its own coal and thermoelectricity. It is also the unique enterprise who has the complete Si industry chain from quartz, silicon metal, monomer synthesis to the downstream products. Since the foundation in 2005, equipping with leading production, R&D and world class industrial infrastructure.

STANDARD SILICON RUBBER

High glossiness with good rebound resilience, economic and demoulding performance. Suitable for high appearance required molding products

Grade	Appearance	Hardness (Shore A)	Tensile Strength (MPA) >	Tear Strength (kN/m)	Elongation (%) >	Tensile Set	Rebound (%)>
HS-3430	Translucent	27-33	5.5	13	400	8	65
HS-3440	Translucent	37-43	7.5	16	350	8	50
HS-3450	Translucent	47-53	7.5	17	300	8	50
HS-3460	Translucent	57-63	7.5	17	250	8	45
HS-3470	Translucent	67-73	6.5	16	200	8	45
HS-3480	Translucent	77-83	6	16	100	8	40

GENERAL PURPOSE SILICON RUBBER

High transparency, demoulding performance. Suitable for molding applications.

Grade	Appearance	Hardness (Shore A)	Tensile Strength (MPA) >	Tear Strength (kN/m)	Elongation (%) >	Tensile Set	Rebound (%)>
HS-3421	Translucent	17-23	4	12	700	8	63
HS-3431	Translucent	27-33	5.5	13	450	8	66
HS-3441	Translucent	37-43	7.5	16	400	9	54
HS-3451	Translucent	47-53	7.5	17	350	9	55
HS-3461	Translucent	57-63	7.5	17	300	9	48
HS-3471	Translucent	67-73	6.5	16	250	8	45
HS-3481	Translucent	77-83	6	16	150	8	42
HS-3491	Translucent	87-93	4	15	50	7	58

COMMON SILICON RUBBER FOR MOLDING

Good transparency, rebound resilience and demoulding performance. Suitable for swimming cap, various kinds of keypads, home applainces, cake molds and seals.

Grade	Appearance	Hardness (Shore A)	Tensile Strength (MPA) >	Tear Strength (kN/m)	Elongation (%) >	Tensile Set	Rebound (%)>
HS-2111	Translucent	10-15	3	9	800	10	56
HS-2121	Translucent	17-23	3	8	600	10	55
HS-2131	Translucent	27-33	5	13	550	8	60
HS-2141	Translucent	37-43	6.5	16	450	8	60
HS-2151	Translucent	47-53	6	17	350	8	55
HS-2161	Translucent	57-63	6	17	300	7	50
HS-2171	Translucent	67-73	6	16	200	7	43
HS-2181	Translucent	77-83	4	14	150	8	40

STANDARD SILICON RUBBER FOR MOLDING

High transparency, Non fluorescent additive, rebound resilience and demoulding performance. Suitable for various kinds of keypads, parts and silicone rubber products.

Grade	Appearance	Hardness (Shore A)	Tensile Strength (MPA) >	Tear Strength (kN/m)	Elongation (%) >	Tensile Set	Rebound (%)>
HS-2122	Translucent	17-23	4	11	750	8	60
HS-2132	Translucent	27-33	5	13	550	8	60
HS-2142	Translucent	37-43	6.5	16	450	8	60
HS-2152	Translucent	47-53	6	17	350	6	55
HS-2162	Translucent	57-63	6	17	300	6	50
HS-2172	Translucent	67-73	6	16	200	6	43

GENERAL SILICON RUBBER FOR EXTRUSION

High transparency, and processability for extrusion. Suitable for DCBP Sulfide and making various kinds of extrusion rubber hose, strip and wire.

Grade	Appearance	Hardness (Shore A)	Tensile Strength (MPA) >	Tear Strength (kN/m)	Elongation (%) >	Tensile Set	Rebound (%)>
HS-1131	Translucent	27-33	5.5	13	400	8	65
HS-1141	Translucent	37-43	7.5	16	350	8	50
HS-1151	Translucent	47-53	7.5	17	300	8	50
HS-1161	Translucent	57-63	7.5	17	250	8	45
HS-1171	Translucent	67-73	6.5	16	200	8	45
HS-1181	Translucent	77-83	6	16	100	8	40

PLATINUM VULCANIZATION SILICONE RUBBER FOR EXTRUSION

Good transparency and processability for extrusion. Suitable for platinum vulcanization and making various kinds of extrusion rubber hose, strip and wire.

Grade	Appearance	Hardness (Shore A)	Tensile Strength (MPA) >	Tear Strength (kN/m)	Elongation (%) >	Tensile Set	Rebound (%)>
HS-1251	Translucent	47-53	7	18	320	8	50
HS-1261	Translucent	57-63	7	18	280	8	45
HS-1271	Translucent	67-73	6.5	16	200	8	40
HS-1281	Translucent	77-83	6	16	150	8	40

STANDARD SILICONE RUBBER FOR EXTRUSION

High transparency and processability for extrusion.Suitable for the high transperency extrusion products with DCBP or platinum vulcanization.

Grade	Appearance	Hardness (Shore A)	Tensile Strength (MPA) >	Tear Strength (kN/m)	Elongation (%) >	Tensile Set	Rebound (%)>
HS-1131PT	Translucent	31±2	6	14	550	8	60
HS-1141PT	Translucent	39-43	8	18	600	6	60
HS-1151PT	Translucent	48-53	8	18	450	6	55
HS-1161PT	Translucent	58-62	8	20	350	6	50
HS-1171PT	Translucent	68-72	8	20	270	6	45
HS-1181PT	Translucent	78-82	7.5	20	200	4	45

Kuraray's styrenic block copolymer SEPTON™

SEPTON™ – High-Performance TPE

SEPTON™ is thermoplastic elastomer and its series are used in a great number of TPE compounds and can be processed in various forms. These styrenic TPEs cover a broad range of applications as below:

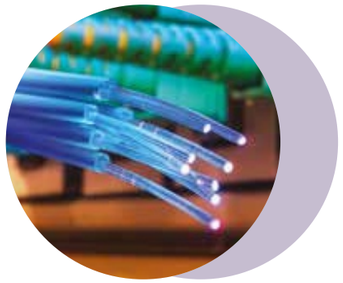
Mobility

Medical

Oil modification

Consumer goods

Personal care



Electronics

SEPTON™

SEPTON™ 4000-series (SEEPS)

Grade	Styrene content	MFR		Solution viscosity (Toluene solution 30°C)			Physical form	Hardness type A
	wt%	230°C, 2.16 kg (g/10 min)	200°C, 10 kg (g/10 min)	5wt% (mPa.s)	10wt% (mPa.s)	15wt% (mPa.s)		
4033	30	<0.1	<0.1	-	50	390	Crumbs	76
4044	32	No flow	No flow	22	460	-	Crumbs	-
4055	30	No flow	No flow	90	5800	-	Crumbs	-
4077	30	No flow	No flow	300	-	-	Crumbs	-
4099	30	No flow	No flow	670	-	-	Crumbs	-

Unique SEPTON™ 4000-series shows high tensile strength, moderate elongation with exceptional oil absorbancy with low gels and defects. Kuraray produces SEPTON™ 4000-series with a range of molecular weights and high quality. It is used in several applications like gels and films, automotive, soft touch compounds, PVC replacement & many more.

SEPTON™ 8000-series (SEBS)

Grade	Styrene content	MFR		Solution viscosity (Toluene solution 30°C)			Physical form	Hardness type A
	wt%	230°C, 2.16 kg (g/10 min)	200°C, 10 kg (g/10 min)	5wt% (mPa.s)	10wt% (mPa.s)	15wt% (mPa.s)		
8004	31	<0.1	<0.1	-	40	-	Crumbs	80
8006	33	No flow	No flow	42	-	-	Crumbs	-
8851*	33	No flow	No flow	42	-	-	Crumbs	-

*Available soon

With its popular mid-block structure as an industry standard material, SEPTON™ 8000-series is an excellent choice, and Kuraray's customers use SEPTON™ 8000-series in adhesives, automotive, and personal care products.

HYBRAR™

HYBRAR™ 5000-series (non-hydrogenated)

Grade	Type	Styrene content	T_g	MFR		Solution viscosity (Toluene solution 30°C)			Physical form	Hardness type A
		wt%	°C	190°C, 2.16 kg (g/10 min)	230°C, 2.16 kg (g/10 min)	15wt% (mPa.s)	20wt% (mPa.s)	30wt% (mPa.s)		
5125	Vinyl-bond rich SIS	20	-13	3	-	-	100	650	Pellet	60
5127	Vinyl-bond rich SIS	20	8	3	-	-	85	540	Pellet	84

Its damping properties make HYBRAR™ is the product of choice for sports equipment and foamable sound damping sealants. Other applications include adhesives, coatings, sealants, hearing protection, automotive, and housing and construction components.

HYBRAR™ 7000-series (hydrogenated)

Grade	Type	Styrene content	T_g	MFR		Solution viscosity (Toluene solution 30°C)			Physical form	Hardness type A
		wt%	°C	190°C, 2.16 kg (g/10 min)	230°C, 2.16 kg (g/10 min)	15wt% (mPa.s)	20wt% (mPa.s)	30wt% (mPa.s)		
7125F	Vinyl-bond rich SEPS	20	-15	0.7	4	-	60	350	Pellet	64
7311F	Vinyl-bond rich SEEPS	12	-32	0.5	2	95	240	-	Pellet	41

Hydrogenated grades show an execllent miscibility with polypropylene. When blended, this results in exceptional transparency and clarity. Medical film and tubing film manufactured using HYBRAR™ is a more environmentally friendly alternative to flexible PVC due to the absence of harmful plasticizers.

What are some examples of compounds we can make with SEPTON™?
Some of the basic formulations are shown below. We can help to predict the possible mechanical property of a compound by using our simulation system. Feel free to get in touch with Kuraray to get more assistance.

	Unit	Formulation 1	Formulation 2
Formulation			
SEPTON™ 8851	wt	100	100
Paraffin oil	wt	125	100
h-PP	wt	45	65
Properties			
Hardness (type A) 15 s	-	64	84
Tensile test (MD)			
100% modulus	MPa	2.6	3.8
Tensile strength	MPa	10.2	23.8
Elongation at break	%	730	870
Tensile test (TD)			
100% modulus	MPa	2.0	4.7
Tensile strength	MPa	15.1	18.4
Elongation at break	%	830	760
Compression set (70 °C-22 h)	%	40	53
MFR (230 °C-2.16 kg)	g/10 min	1.0	2.4
Possible applications			
	-	Soft rubber replacement (Consumer goods, grips, swimming goggles etc.)	Soft Rubber replacement (Castors, swimming fins etc.)

- **How can we improve the compatibility of SEPTON™ or HYBRAR™ with other polar resins like polyamide, PC, ABS etc.?**

  - Compatibility can be improved through the use of compatibilizers.
  - KURAMIRON™ U TU-S5265 is recommended for enhanced performance.
  - Particularly effective with TPU, POM, PA, and PBTAlternative compatibilizers include.
  - MAh-POE (for PA) and E-GMA (for PBT)For specific formulations, consultation is advised.

- **Is printing possible on TPE compound surface?**

  - Printing is feasible on SEPTON™ and HYBRAR™ compounds.
  - Inks formulated for polyolefin or SBR are recommended.

- **What are the solvents recommended for dissolving SEPTON™ or HYBRAR™ for spray film application?**

  - Commonly used solvents include cyclohexane and toluene.
  - Additional solvent options should be selected based on solubility characteristics.

- **How to improve the weatherbility and UV resistance of SEPTON™ & HYBRAR™ compound?**

  - Incorporation of UV absorbers, carbon black, or HALS is recommended.
  - HALS such as BTMPS are effective stabilizers.
  - These additives enhance long-term durability and UV stability.

- **Are SEPTON™ / HYBRAR™ grades are REACH, RoHS, SVHC , HALAL certified?**

  - Substances restricted under RoHS and SVHC are not intentionally used.
  - Substances listed under REACH Annex XIV are not part of the production process.
  - No HALAL certification (as of March 2025).

- **At what ratio SEPTON™ grades are compatible with polyolefin resins (HDPE, LLDEP ,LDPE & PP)?**

  - Typical formulation range: 5–30 wt% SEPTON™.
  - For polyethylene: SEPTON™ 4000 or 8000 series are recommended.
  - For polypropylene: SEPTON™ 2000 series or HYBRAR™ 7000 series are suitable.
  - Matching melt viscosity with base resin is advised.
  - Ratios can be optimized based on desired end-use properties.

- **Is there any SEPTON™ and HYBRAR™ grades are that can be used for medical application? Any data on Bio-compatibility test?**
  Yes, below three grades are recommended to medical use.

  - SEPTON™ 2004F
  - HYBRAR™ 7125F
  - HYBRAR™ 7311F

What is SEPTON™ BIO-series?

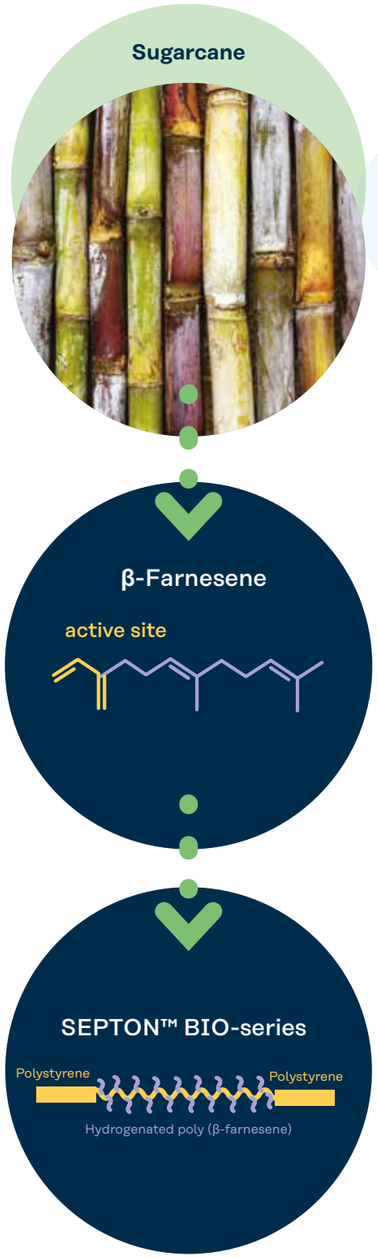
SEPTON™ BIO-series is a unique hydrogenated styrene farnesene block copolymer (HSFC). Derived from sugarcane, this bio-based TPE is a more sustainable alternative to conventional HSBCs.

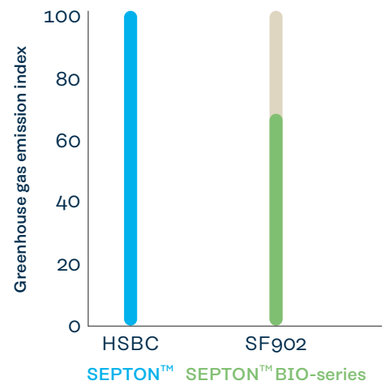
Features and benefits

- Bio-based polymer with up to 80% bio content
- Lower greenhouse gas emissions than conventional HSBC's
- Excellent wet and dry grip performance
- Strong and stable adhesion force across a wide temperature range
- Good processability
- Good damping properties over a wide temperature range
- Low compression set, low permanent set
- Soft without plasticizer
- Enables adhesive applications with excellent removability and no residue

Applications*

- Adhesives, coatings, sealants
- Compounding
- Consumer goods
- Electronics
- Industrial & construction
- Mobility
- Sporting goods & footwear
- 3D printing





Up to **33%** reduction in greenhouse gas emissions**

*For certain applications, SEPTON™ BIO-series cannot be introduced due to raw material supply relations. Please contact our sales representatives.

**Assumptions & Limitations
For detailed information on assumptions and limitations, please contact our sales representatives.

Principles & Frameworks
- Calculation principles & frameworks: ISO14040:2006 and ISO14044:2006
- Lifecycle Inventory database: IDEA (Inventory Database for Environmental Analyses) version 2.3
  - LCIA model: IPCC AR5 100a

System Boundaries
- Cradle to gate
- Biogenic darbon absorption is included
- Incineration and transportation to customer sites are not included

Associates

Hanwha TotalEnergies Petrochemical is a comprehensive material and energy company that produces high value–added chemical and energy products. Since it was founded in 1988, we have led the growth of the petrochemical business in South Korea through technological innovations and by successfully executing a market expansion strategy. In 2003, we began building the foundation to become a global multi-material and energy company. We executed that plan by forming a joint venture with the TotalEnergies Group, a major French company in the energy and chemical industry. Since then, we have continued to lead South Korea's petrochemical market and grow as South Korea's leading company through product innovations, strategic diversified investments and economies of scale.

Grade	Melt Index	Density	VA Content	Melt temperature		Tensile strength(at break)	Elongation (at break)	Shore hardness		Vicat softening point	Brittleness temperature	APPLICATION	CHARACTERISTICS
ASTM/HTC	ASTM D1238 (190℃,2.16kg)	ASTM D1505	HTC Method	HTC Method	ASTM D3418	ASTM D638	ASTM D638	ASTM D2240		ASTM D1525	ASTM D746		
Unit	g/10min	g/㎤	%	℃	℃	kg/㎠	%	D Scale		℃	℃		
E282PV	25	0.948	28	70	-	100	890	22		38	<-70	Foam, Crosslinked foam, Atheletic shoe in-sole/mid-sole	Good processability and crosslinking property during foaming process, Good mechanical properties, Uniform additive dispersibility
E265F	6	0.947	26	73	-	180	800	28		47	<-70	Foam, Crosslinked foam, Atheletic shoe in-sole/mid-sole	Good processability and crosslinking property during foaming process, Good mechanical properties, Uniform additive dispersibility
E263F	3.0	0.947	26	-	73	250	>800	28		47	<-70	Foam, Crosslinked foam, Atheletic shoe in-sole/mid-sole	Good processability and crosslinking property during foaming process, Good mechanical properties, Uniform additive dispersibility
E220F	3	0.944	22	83	-	290	800	35		55	<-70	Foam, Crosslinked foam, Atheletic shoe in-sole/mid-sole	Good processability and crosslinking property during foaming process, Good mechanical properties, Uniform additive dispersibility
E182L	15	0.940	18	83	-	130	>600	-		56	<-70	Coating, BOPP coating	Excellent transparency, Excellent extrusion processability and productivity, Neck-in, Adhesive
E181L	25	0.940	18	83	-	125	>600	-		56	<-70	Coating, BOPP coating	Excellent transparency, High speed processability, Neck-in, Adhesive
E181F	2.5	0.940	18	85	-	240	750	38		64	<-70	Foam, Crosslinked foam, Atheletic shoe in-sole/mid-sole	Good processability and crosslinking property during foaming process, Good mechanical properties, Uniform additive dispersibility
E180L	2	0.940	18	86	-	260	750	38		64	<-70	Film, General film, Eco-friendly sheet	Low Fisheye, Transparency, Excellent processability
E180F	2	0.94	18	86	-	260	750	38		64	<-70	Foam, Crosslinked foam, Atheletic shoe in-sole/mid-sole	Good processability and crosslinking property during foaming process, Good mechanical properties, Uniform additive dispersibility
E156W	6	0.936	15	87	-	150	750	39		65	<-70	Wire & cable, semi-conductive shield application, Semi-conductive shield application (inner layer)	Excellent processability, Excellent mechanical properties, Uniform additive dispersibility, Electrical insulation
E155L	11	0.938	15	87	-	130	>600	-		57	<-70	Coating, PET coating	Excellent transparency, Excellent extrusion processability and productivity, Neck-in, Adhesive
E153F	1.6	0.938	15	90	-	200	750	39		69	<-70	Foam, Crosslinked foam, Atheletic shoe in-sole/mid-sole	Good mechanical properties, Good processability and crosslinking property during foaming process, Uniform additive dispersibility
E140A	4.5	0.936	14	91	-	190	750	38		69	<-70	Film, General film, Packaging	Excellent mechanical properties, Transparency, Excellent processability, Low Fisheye
E120A	1.0	0.931	12	93	-	230	870	38		76	-	Film, Agricultural film, Greenhouse film	Excellent mechanical properties, Transparency, Excellent processability
E032A	0.5	0.923	3	104	-	195	820	43		89	-	Film, Agricultural film, Greenhouse film	Excellent mechanical properties, Transparency, Excellent processability

Associates

REACH Certified IATF 16949 | OHSAS 18001 | ISO 14001

DIAMOND SULF

OCCL, belonging to JP Goenka Group of companies, is one of the market leaders in the production of Insoluble Sulphur for the Tyre and Rubber industry around the world both in terms of quality as well as quantity. The company is oriented towards growth in a socially and environmentally sustainable manner. It has state of the art manufacturing facilities in India at Dharuhera (Harayana) and at Mundra (Gujarat).

- Only insoluble sulphur manufacturer in India
- Production capacity 33000 MT/annum
- Having 23+ years of experience
- Global presence
- Listed both in BSE & NSE
- State of the art lab & RnD facility

	Regular Grades				High Stable Grades			Value Added Grades			Special Grades		
PROPERTIES	DS OT 10	DS OT 20	DS OT 33		DS OT 10 HS	DS OT 20 HS	DS OT 33 HS	DS 60	DS OT 16	DS 35	DS OT 20 HD	DS OT 25 AS	DS 90
Appearance	Yellow Fine powder												
Elemental Sulphur %	90±1	80±1	67±1		90 ± 1	80 ± 1	67 ± 1	NA	63 ± 2	77 ± 1.5	80 ± 1.5	67 ± 1	99.5 ± 0.5
Insoluble Sulphur % (Min) (On Total S)	90	90	90		90	90	90	60	84	35	90	90	90
Oil Content	10±1	20±1	33±1		10 ± 1	20 ± 1	33 ± 1	NA	15.8 ± 2.0	23 ± 1.5	20 ± 1	25 ± 1.5	NA
Acidity (as H2SO4) % (Max)	0.05	0.05	0.05		0.05	0.05	0.05	NA	NA	NA	0.05	0.05	0.05
Ash Content % (Max)	0.05	0.05	0.05		0.05	0.05	0.05	0.2	21 ± 1.5	0.2	0.05	8 ± 1	0.1
Heat Loss % (Max)	0.5	0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
100 Mesh % (Max)	0.2	0.2	0.2		0.2	0.2	0.2	NA	NA	NA	NA	NA	NA
200 Mesh % (Max)	2	2	2		2	2	2	NA	NA	NA	NA	NA	NA
Thermal Stability Heating @ 105 C for 15 min. (In Liquid Paraffin) % (Min)	NA	NA	NA		80	80	80	NA	NA	NA	75	75	NA
RMS	NA	NA	NA		NA	NA	NA	40	NA	42	NA	NA	NA

NINGXIA BOYUAN RUBBER CO., LTD.宁夏博远橡胶有公司

PRODUCTION PROCESS:

LIXING-CSM is a kind of special rubber, it is produced from polyethylene by chlorination and chlorosulphonation with chlorine and sulphur dioxide. Various Grades of Lixintg-CSM are obtained according to the degree of chlorination and chlorosulphonation as well as sort of polyethylene polymer, the molecular chain is fully saturated.

SPECIFICATIONS:

Grade	Mooney viscosity	Cl content%	Sulphur content%	Vdaf%
CSM40-3304	41~50	35±2	1 ±0 2	<1 0
CSM40-3305	51~60	35±2	1 ±0.2	<1.0
CSM40-3306	61~70	35±2	1 ±0.2	<1.0
CSM40-3307	71~80	35±2	1 ±0.2	<1.0
CSM40-3308	81~90	35±2	1 ±0 2	<1 0
CSM45	25~40	25±2	1 ±0.2	<1.0

PROPERTIES

LIXING brand CSM provides a wide range of high-performance characteristics .

- Resistant to alkali and acid
- Color stability
- Resistant to temperature extremes
- Smooth material forms to different applications
- Excellent adhesion to metals
- Good electrical properties
- Radar transparent

PHYSICAL PROPERTIES

Elongation: 100% – 800%
Hardness Range (Durometer Shore A): 45 – 95
Tensile Strength: 1,000 – 3,000 psi

Zhenjiang Wholemark Fine Chemicals Co. Ltd

Professional producer and reliable supplier of Accelerators, Antiozonants, Antioxidants, Anti-scorching agents, Silane coupling agents, Foaming agents, Vulcanizers, Cobalt sales, and so on for Rubber & Plastics. Exclusive distributor for Celogen® in Asia-Pacific Region.

WE ARE

- Producing, treading and researching for Chemicals
- Focusing on rubber / plastic additives
- Having 7 production bases & co-producers
- Growing together with our friends both inside and outside china
- Satisfying our old & new friends
- Adding values to our friends "Business & Products"
- Continuing our innovations in Chemical Industry

Wholemark Fine Chemicals

TRADE NAME	COMPOSITION	CAS NO.	FORM	EQUIVALENT
ACCELERATORS				
Markator® DPTT	Dipentamethylene thiuram hexasulfide	120-54-7	Light yellow powder	Nocceler TRA Perkacit DPTT
Markator® DPG	Diphenyl Guanidine	102-06-7	White powder or granule	Vulkacit D
Markator® ETU	Ethylene thiourea	96-45-7	White powder	NA-22 Vulkacit NPV
ANTIOXIDANTS				
Markox® MB	2-mercapto benzimidazole	583-39-1	White to light yellow crystal or powder	Vulkanox MB Nocrac MB
VULCANIZERS				
Markulzer® DTDM	4,4'-dithio dimorpholine	103-34-4	White Powder	Vulnoc R MS-R
ORGANIC SILANE				
Markosi® 69	Bis(3-ethoxysilane propyl) tetrasulfide	40372-72-3	Light yellow liquid	Si-69 KH-845-4 A-1289 KBE-846

Payal Group
Driven by a Committed Vision

PAYAL'S GENERAL PURPOSE PRIMARY PLASTICIZERS - "PAYFLEX" SERIES

PRODUCT SPECIFICATION	TEST METHOD	PAYFLEX P -80 (DOP)	PAYFLEX P-40 (DIBP)	PAYFLEX P-90 (DINP)	PAYFLEX P-100 (DIDP)	PAYFLEX T - 80 (DOTP)	PAYFLEX P - 10 (DMP)	PAYFLEX - P-20 (DEP)
APPEARANCE	VISUAL	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID
SPECIFIC GRAVITY @27°C	ASTM D-1045	0.980-0.986	1.030-1.040	0.970-0.976	0.960 - 0.966	0.980 - 0.986	1.180-1.190	1.114-1.120
ACIDITY as acid % By mass ,maximum	ASTM D-1045	00.1	0.01	0.01	0.01	0.01	0.015	0.015
Water(Moisture) % by weight ,maximum	ASTM E-203	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Colour ,Pt-Co units (HU),maximum	ASTM D-1045	20	20	20	20	20	20	20
Volatile loss (130°C/3 hrs) % weight (30 gm sample in 150 ml beaker)	Payal TM	0.10	0.1 % @ 110°C/2 hrs	0.10	0.10	0.1	0.5 % @ 110°C/1 hrs	0.2 % @ 110°C/1 hrs
Heat stability @180°C/2 hrs unit (HU)	IS 9591 : 1996	No change in colour	No change in colour@150°c/2 hrs	No change in colour	No change in colour	No change in colour	35 HU @150°C / 2 hrs	35 HU @150°C / 2 hrs
Residual alcohol % by area	Payal TM	0.10	0.1	0.10	0.10	0.1	0.02	0.02
ESTER VALUE , (mg KOH/gm)	ASTM D-1045	284 - 290	403 ± 2	267 ± 3	250± 3	284-289	575 ± 3	503 ± 3
Plasticizing Ester % by GLC	Payal TM	99.5	99.5	99.5	99.5	99.5	99.5	99.5
Boiling point ,°C		231 @ 6.7 mbar	Boiling point @ atm PR ,°C- 327	252 @ 3.5 mmHg	260 @ 6 mbar	400	283	299
Absolute viscosity @ 20°C ,cp		81	34.5	79	114	63	16.9	13
Refractive index @ 27 °C		1.485	1.4898	1.485	1.483	1.485	1.512	1.5
Flash point (COC) °C		218	185	224	232	>210	150	160
Pour Point, °C		-46	-46	-45	-48	-50	NA	NA
Volume Resisitivity		$2.0\pm0.2*10^{11}$	NA	$2.5\pm0.2*10^{11}$	$4.5\pm1.0*10^{11}$	$5.5\pm1.0*10^{11}$	NA	NA
Plasticizing Efficiency		1.00	0.86	1.06	1.1	1.03	NA	NA
Molecular Weight		390	278	418	446	390	194	222
CAS No.		117-81-7	84-69-5	28553-12-0	26761-40-0	6422-86-2	131-11-3	84-66-2
APPLICATIONS	PVC COMPOUNDS - WIRES & CABLES, FOOTWEAR,FLEXIBLE PVC FILMS, ARTIFICIAL VINYL LEATHER, PVC FLOORING,MEDICAL APPLICATIONS, AUTOMOTIVES, FOOD GRADE PACKAGINGS, RUBBER COMPOUNDS, CONVEYOR BELTINGS,HOSE PIPES ETC							
SPECIAL FEATURES		PHTHALATE PLASTICIZER	LOW MOLECULAR WEIGHT PHTHALATE PLASTICIZER	HIGH MOLECULAR WEIGHT PHTHALATE PLASTICIZER	HIGH MOLECULAR WEIGHT PHTHALATE PLASTICIZER	REACH COMPLIANT & PHTHALATE FREE		

Disclaimer : Information in this publication is believed to be accurate and is given in good faith but during processing and formulation there are so many factors which may affects the desired application results of chlorinated paraffin's, so these data neither imply any guarantee of certain properties nor the suitability of the product for specific applications. Any data given in this publication may change without prior information and do not constitute the agreed quality of our product.

PAYAL'S SPECIALTY PLASTICIZERS RANGE - "PAYFLEX" SERIES

PRODUCT SPECIFICATION	TEST METHOD	PAYFLEX M - 40 (DBM)	PAYFLEX M - 80 (DBM)	PAYFLEX P-400 (N-DBP)	PAYFLEX A- 80 (DOA)	PAYFLEX A- 90 (DINA)	PAYFLEX TM 80 (TOTM)	PAYFLEX - P 50	PAYFLEX P-91
APPEARANCE	VISUAL	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID	CLEAR OILY LIQUID
SPECIFIC GRAVITY @27°C	ASTM D-1045	0.990-0.996	0.940-0.946	1.040- 1.050	0.922 - 0.966	0.905 - 0.925	0.985-0.995	0.985 - 1.05	0.964 - 0.972
ACIDITY as acid % By mass ,maximum	ASTM D-1045	0.02	0.02	0.01	0.02	0.02	0.03	0.01	0.01
Water(Moisture) % by weight ,maximum	ASTM E-203	0.15	0.15	0.1	0.1	0.1	0.1	0.1	0.1
Colour ,Pt-Co units (HU),maximum	ASTM D-1045	40	40	20	20	20	50	25	20
Volatile loss (130°C/3 hrs) % weight (30 gm sample in 150 ml beaker)	Payal TM	0.3% max.@110°/2 hrs	0.2% max.@130°/3 hrs	0.1 % @ 110°C/2 hrs	0.1	0.1	0.1	0.15	0.1
Heat stability @180°C/2 hrs unit (HU)	IS 9591 : 1996	50 HU max.@150°C / 2	50 HU	No change in colour@150°c/2	40	40	65	No change in colou	No change in colou
Residual alcohol % by area	Payal TM			0.1	0.1	0.1	0.1	0.1	0.1
ESTER VALUE , (mg KOH/gm)	ASTM D-1045	492 ± 3	330 ± 3	403 ± 2	302 ± 3	281 ± 3	303-310	280-290	267±3
Plasticizing Ester % by GLC	Payal TM	99	99	99.5	99.5	99.5	99	99.5	99.5
Boiling point ,°C		280.6 C	209 @10 mmHg	Boiling point @ ATM PR ,°C- 340	Boiling point @ ATM PR ,°C- 417	228 @ 6.7 mbar	283@7 mbar		252 @ 10 mbar
Absolute viscosity @ 20°C ,cp		7	18-21	21	13	20-25	272-277	60	52
Refractive index @ 27 °C		1.445	1.454	1.4898	1.447	1.450	1.485	1.483	1.483
Flash point (COC) °C		140	182	185	192	215	250	>200	240
Pour Point, °C		-50	-85	-46	-76	-68	-46	NA	NA
Volume Resistivity, Ohm Cm		NA	NA	NA	$3.2\pm0.2*10^{11}$	$4.5\pm0.5*10^{11}$	$4.5\pm1.5*10^{11}$	NA	NA
Plasticizing Efficiency		NA	NA	0.86	0.93	0.98	1.17	NA	NA
Molecular Weight		228	340	278	370	398	546	PROPRIETARY	PROPRIETARY
CAS No.		105-76-0	142-16-5	84-74-2	103-23-1	33703-08-01	3319-31-1	NA	NA
APPLICATIONS	PVC COMPOUND FOR - WIRES & CABLES, FOOTWEAR,FLEXIBLE PVC FILMS, ARTIFICIAL VINYL LEATHER, PVC FLOORING,MEDICAL APPLICATIONS, AUTOMOTIVES, FOOD GRADE PACKAGINGS, RUBBER COMPOUNDS, CONVEYOR BELTINGS,HOSE PIPES ETC								
SPECIAL FEATURES		MALEATE PLASTICIZERS	MALEATE PLASTICIZERS	PHTHALATE PLASTICIZER	REACH COMPLIANT & PHTHALATE FREE	REACH COMPLIANT & PHTHALATE FREE	REACH COMPLIANT & PHTHALATE FREE	PROPRIETARY	

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RUBALOY®
NBR-PVC

A POLYBLEND OF NBR-PVC

Rubaloy is a dry/mechanical Polyblend of NBR and PVC. Polyblends have changed considerably over the last few years and are now capable of giving finer, stronger materials with unique properties and an improved finish. Different ratios of NBR:PVC used in our product (varies from grade to grade) gives it an edge over Nitrile Rubber in ozone resistance, Chloroprene in fuel resistance & cost; and oil resistance in the case of EPDM.

EXCELLENT FUEL, OIL, OZONE, SOLVENT AND ABRASION RESISTANCE

Products made from Rubaloy have excellent fuel, oil, ozone, solvent and abrasion resistance; the finish is smooth and glossy due to the presence of PVC. Specialty grades offer unique properties such as low temperature resistance, extremely low hardness, fuel 'C' resistance, fire retardancy, anti-static properties; and the ability to produce light weight micro-cellular products. Rubaloy also offers low cost, general purpose grades for ozone and oil resistance. Due to its selected formulations and variety of grades, optimum physical and chemical properties can be achieved, along with excellent dimension control on extrudates and moulded products.

Our product's manufacturing process creates negligible or no pollution at all. Even though Rubaloy is a dry/mechanical blend, it has superior dispersion and therefore, enhanced physical properties. The product is RoHS compliant. Its ingredients/components are listed on the U.S. EPA TSCA 8(b) Inventory; and it also meets the all important REACH norms.

Rubaloy is packaged in 25 kg. LDPE bags for easy loading into mixers or HDPE reinforced paper bags for rough handling.

Rubaloy is manufactured by Imperial Water-proofing Industries Pvt. Ltd (An ISO 9001-2008 Company and a Government Recognized Export House), which was formed in 1959 in Mumbai, India.

NBR-PVC, as the name suggests is a combination or blend of acrylonitrile butadiene rubber (nitrile rubber/nbr) and polyvinyl chloride (pvc resin) and is categorised as a 'polyblend'.

As a combination of nitrile rubber and pvc, it maintains most characteristics of both, making it oil, fuel, ozone, solvent and abrasion resistant.

GRADES

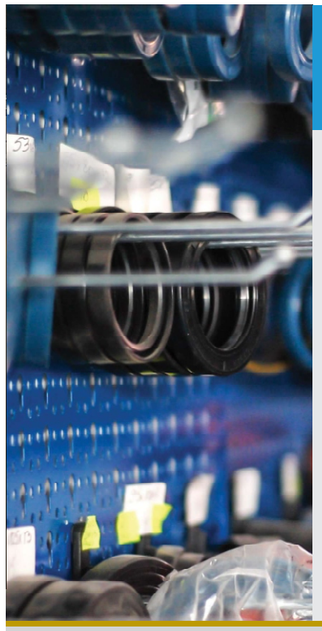
GRADE	RAW POLYMER HARDNESS ºA	SPEC GRAVITY	EXPECTED MOONEY	ACN CONTENT	EXTR. %	POLY RATIO	REMARKS
RA - 70	50 ± 5	1.04 ± 0.02	50 ± 5	33%	9	70/30	70/30 blend, 50 mooney
RA - 7060	55 ± 5	1.04 ± 0.02	60 ± 5	33%	9	70/30	70/30 blend, 60 mooney
RA - 7047	50 ± 5	1.06± 0.02	55 ± 5	33%	18	70/30	General Purpose
RA - 703G	60 ± 5	1.04 ± 0.02	75 ± 5	33%	5	70/30	———
RA - 7573	50 ± 5	1.02 ± 0.2	65 ± 5	33%	11.75	70/30	General Purpose
RA - 7360	60 ± 5	1.04 ± 0.02	65 ± 5	33%	1	70/30	70/30 blend, High Tensile
RA - 7380	60 ± 5	1.04 ± 0.02	80 ± 5	33%	1	70/30	High Mooney, High Tensile
RA - L7360	60 ± 5	1.04 ± 0.02	65 ± 5	28%	1	70/30	70/30 Blend, Low Temp. Resistance
RA - 75	65 ± 5	1.06 ± 0.02	70 ± 5	39%	8	70/30	70/30 Blend, High A.C.N.
RA - 4465	60 ± 5	1.03 ± 0.02	60 ± 5	44%	1	70/30	Ultra High A.C.N. Content for Very High Oil and Fuel Resistance
RA - 6040	65 ± 5	1.11 ± 0.02	90 ± 5	33%	2.4	60/40	60/40 Blend for High Ozone Resistance
RA - 6490	65 ± 5	1.07 ± 0.02	90 ± 5	44%	1	60/40	———
NBP 3050	42 ± 5	0.98 ± 0.02	52 ± 5	33%	5	85/15	High Nitrile Rubber Content
RA - 8020	40 ± 5	1.02 ± 0.02	50 ± 5	33%	10	80/20	Low PVC Content, Improved Compression Properties
RA - 50	60 ± 5	1.11 ± 0.02	60 ± 5	33%	12	50/50	50/50 Blend for High Ozone Resistance
RA - S	45 ± 5	1.09 ± 0.02	30 ± 5	33%	20	30/20	Polyblend for Soft, Low Hardness Products
RA - SS	30 ± 5	1.05 ± 0.02	25 ± 5	33%	70	60/40/70	Very Low Hardness Compound
RA - 2530	50 ± 5	1.07 ± 0.02	50 ± 5	33%	43	10/10/15	Oil Extended and Low Hardness Applications
RA - FRLT	60 ± 5	1.08 ± 0.02	55 ± 5	33%	9	70/30	For Fire Retardancy
RA - 73	55 ± 5	1.05 ± 0.02	60 ± 5	33%	10	70/30	Low Cost, General Purpose

*Grades subject to change without prior notice.

DiamondKote™

DiamondKoteFranklynn mold release agents provide much more than release of molded parts from mold surfaces: they're a tool designed for your specific needs - permanent, semi-permanent, or sacrificial performance - on all types of rubber elastomers, urethanes, fiberglass, and other resins. Our expert chemists create innovative mold release technologies to optimize your production process and minimize scrap. Release agents customized to your process will:

- Improve product finish and appearance, lowering scrap rates and improving throughput
- Save time and money by reducing downtime cost of cleaning labor and material
- Reduce release transfer to molded products, improving post-molding paint or bonding steps
- Achieve desired cosmetic appearance (gloss, matte, overall feel, etc.)



Franklynn DiamondKote™ for General Rubber Molding

WATER-BASED PRODUCTS

BEST SELLER

DKW-4185
Premium, semi-permanent release agent that can be used on a variety of sulfur-cured elastomers; offers excellent life cycle, cleaner molds, and reduced scrap rates

DKW-157
Semi-permanent release agent for epoxy, phenolic, and composite manufacturing; improves productivity through additional molding cycles between applications

DKW-71E
Stable, low-transfer formula delivers excellent release for all halobutyl compounds; commonly used in the pharmaceutical industry

DKW-4168
Highly versatile release agent can be used on a variety of peroxide-cured elastomers; offers excellent cycle life, cleaner molds, and reduced scrap rates

DKW-4070
Semi-permanent release agent designed for use in the molding of peroxide-cured elastomers such as silicone (polysiloxanes), EPDM, and FKM

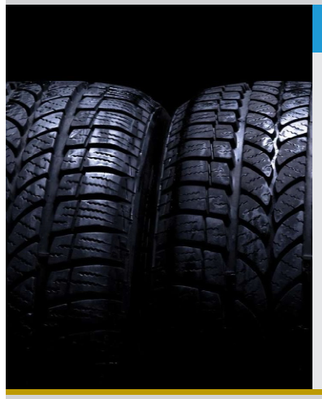
DKW-4013A / DKW-4013D
Silicone-free, semi-permanent release agent designed for silicone and fluorosilicone elastomers

DKW-4237
Silicone-free formula developed for peroxide-cured compounds, excellent for FKM and other exotic compounds

SOLVENT-BASED PRODUCTS

DKH-149
Versatile release agent for bonding natural rubber to metal in Noise Vibration Harshness (NVH) products

All products available in 3 package sizes: 5 gallon pail, 55 gallon drum, and 330 gallon tote



Franklynn DiamondKote™ for Tire Molding

WATER-BASED PRODUCTS

BEST SELLER

DKW-4550CL
Formulated for the molding of all types of rubber tires; delivers multiple molding cycles between applications

DKW-4650BL
Promotes release from tire bladders, reduces bladder buckling and extends bladder life; may be re-applied to a used bladder to promote release of green tires

DKW-4580CL
Formulated for the molding of all types of rubber tires including complex architecture tread designs; creates a superior slip-coating that allows for multiple cycles between reapplication

DKW-3178G3X
Designed to offer a high degree of mechanical slip and repeated excellent release of material

DKW-4655BL
Semi-permanent release agent designed to release tires from the curing bladder and maximize bladder life

All products available in 3 package sizes: 5 gallon pail, 55 gallon drum, and 330 gallon tote

Franklynn DiamondKote™ for Mold Cleaning

SOLVENT-BASED PRODUCTS

BEST SELLER

FRANKLEEN #23
General purpose, mold cleaner designed to cling to mold surfaces, promoting a cleaner working environment and avoiding spills and waste from runoff

FRANKLEEN #1
General purpose, mold cleaner; water-thin formula penetrates deep mold cavities for improved cleaning

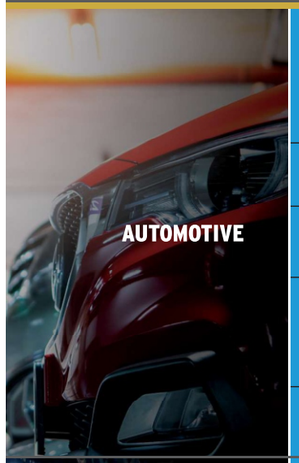
All products available in 2 package sizes: 5 gallon pail and 55 gallon drum

Mold Release Types:

- Sacrificial
- Semi-Permanent
- Permanent
- Water-Based
- Solvent-Based

To optimize performance, Franklynn DiamondKote™ chemists continuously analyze and refine formulations. Testing capabilities include:

- Full Wet Chemical Testing
- FT-IR with Transmission, Reflection, and ATR
- IR and Visible Microscopy
- UV-VIS Spectroscopy
- UV-VIS Fluorescence
- SEM and EDX
- Microwave Solids Analysis
- GC-MS
- HPLC
- Atomic Absorption
- Thermal Analysis (including TGA, DSC, and DMA)
- Mechanical Testing (peel, adhesion, tensile, flexure, fatigue - Instron is a sister ITW company)
- Submicron Particle Size Analysis
- Karl Fischer Analysis
- Viscometry (disc, cone-plate)
- Melt Indexer
- Fineness of Grind
- Abrasion Testing
- Coefficient of Friction (static and dynamic)

INDUSTRY	CATEGORY	MATERIAL TYPES	VALUE
 AUTOMOTIVE	NOISE VIBRATION HARSHNESS	• AEM / AECM • Butyl • FKM • HNBR • Neoprene • Nitrile • NR • Peroxide and sulfur cured EPDM • SBR • Viton®	• Increases number of cycles between applications • Reduces scrap rate • Increases tool longevity • Controls transfer minimizes problems with secondary operations including post-adhesion and post-painting
	BRAKE PADS	• NBR	• Increases number of cycles between applications • Cleaner molds • Easier release
	POWER TRANSMISSION BELTS	• CR • EPDM • NBR • NR • SBR	• Improves semi-permanency for more cycles between touch-ups • Fewer applications • Less frequent mold cleaning • Better release performance
	SOLID AND PNEUMATIC TIRES	• NR • SBR	• Reduces mold release consumption • Improves release, optimizing production process • Increases cavity lube sidewall-bladder life • Increases cycles between touchups, reducing the amount of material used • Tool longevity increases, cleaning expense minimized
	AUTO INTERIOR COMPONENTS	• Aliphatic and Aeromatic Polyurethane	• Improves release delivers superior performance in manufacturing process • Provides appropriate gloss and appearance • Limits transfer for better adhesion
SEALS & GASKETS	AUTOMOTIVE, OIL AND GAS MANUFACTURING	• AEM / AECM • All sulfur and peroxide compounds • Bisphenol A-cured fluoropolymers • EPDM • FKM (Vamac, Aflas, Viton) • HNBR • Neoprene • Nitrile • Silicone	• Increases number of cycles between applications • Reduces mold release consumption • Reduces transfer to parts for better post bonding • Less build-up on the molds, reducing downtime for cleaning • Lower scrap rates • Improves part cosmetics
SPORTING GOODS & ATHLETIC APPAREL	GOLF BALL CORE AND COVER	• Butyl • NR • SBR • Surlyn • Urethane	• Water-based, non-flammable, environmentally friendly formulations • Controls transfer to molded part • Excellent release-ease lasting multiple cycles per single application • Improves part cosmetics, reduces scrap rates
	SHOE COMPONENTS	• EVA • Polyurethane	• Improves release delivers superior performance in manufacturing process • Provides appropriate gloss and appearance • Limits transfer for better adhesion
BUILDING & CAPITAL EQUIPMENT	FIBERGLASS BOARD AND INSULATION PRODUCTS	• Acrylic	• Reduces downtime and increases productivity • Reduces mold release consumption • Improves finished product quality • Eliminates unpleasant odors • Controls transfer minimizes problems with secondary operations including post-adhesion and post-painting
	AIRPLANE CABIN INTERIORS/ WIND BLADES	• Composites • Epoxic • Phenolic	• Increases number of cycles compared to solvent-based releases • Improves productivity by greatly reducing downtime • Eliminates need for additional products (wax & sealants) during molding process • Tools remain very clean
PHARMACUETICAL	TEST TUBE STOPPERS	• Bromobutyl Rubber Compounds • Halobutyl	• Increases number of cycles between applications • Easier flash removal • Leaves less residue on molds/ tooling for a cleaner finished product and workplace

ABBREVIATION	MATERIAL NAME
AEM / AECM	Ethylene Acrylic Rubber
CFRP / CRP / CFRTP	Carbon-Fiber Composite
CR	Neoprene
EPDM	Ethylene Dropylene Diene Monomer Rubber
EVA	Ethylene-Vinyl Acetate
FKM	Fluorine Kautschuk Material
FRP / GRP	Fiberglass Composite
HNBR	Hydrogenated Nitrile Butadiene Rubber
IIR	Butyl Rubber
NBR	Nitrile Rubber
NR	Natural Rubber
PF	Phenol Formaldehyde Resins
PUR / PU	Polyurethane
SBR	Synthetic Rubber

FINORCHEM

ABOUT US

Finorchem produces specialty chemicals and rubber additives with a strong foothold in India and Asia Pacific region. Having ambitious targets to grow we have diversified into pharma intermediates, specialty performance chemicals and constantly working on developing the next generation molecules and chemicals keeping in mind the future needs of the industry.

Trade Name	Chemical composition	Physical Form	Standard Packing	Application
ACCELERATORS				
ACCELERATORS - THIAZOLES				
Mercure MBT	2-mercapto benzothiazole (MBT)	Powder	25 kg paper bag	**Semi ultra accelerator with moderate scorch safety. Used alone or in combination with booster ultra accelerator**
Mercure MBTS	Di-benzothiazole disulphide (MBTS)	Powder	25 kg paper bag	
Mercure ZMBT	Zinc-2-mercapto benzothiazole (ZMBT)	Powder	25 kg paper bag	
Mercure F	Blend of MBTS & basic accelerators	Powder	25 kg paper bag	
ACCELERATORS- SULPHENAMIDE				**Delayed action fast curing primary accelerators**
Mercure CBS	N-Cyclohexyl-2-benzothiazole sulphenamide (CBS)	Pellets/ Powder	25 kg paper bag	**TBSI is delayed action introsamine free accelerator base on primary amine. Rubber compounds based on diene rubbers with TBSI has lower head generation and provides execl-lent reversion resistant vulcanizates it ideal for thick articlant i.e. Tractor and earthmoving tires (OTR) & Engine moutings Has excellent stor-age & hydrolytic stability even under Hot and humid conditions.**
Mercure TBBS	N-Tert-butyl-2-benzothiazole sulphenamide (TBBS)	Pellets/ Powder	25 kg paper bag	
Mercure MBS	2-(morpholinothio)-benzothiazole	Pellets	25 kg paper bag	
Mercure DCBS	N-dicyclohexyl benzothiazole (MBS)	Micro granules	25 kg paper bag	
Mercure TBSI	N-dicyclohexyl benzothiazole Sulfenimide	White to off white oil treated powder	25 kg paper bag	
ACCELERATORS THIURAMS				
Mercure TMT	Tetramethyl thiuram disulphide (TMTD)	Powder	25 kg paper bag	**Ultra fast accelerators. Used alone or as a booster for Thaizole or Sulphenamide accelerators. TMTD & TBzTD also can be used as sulphur donor**
Mercure TBzTB	Tetra benzyl thiuram disulphide (TBzTD)	Powder	25 kg paper bag	
Mercure TMTM	Tetra benzyl thiuram monosulphide (TMTM)	Powder	25 kg paper bag	
ACCELERATORS GUANIDINE				
Mercure DPG	Diphenyl guanidine (DPG)	Powder	25 kg paper bag	**Used as secondary accelerator (booster) for mercapto & sulphenamide accelerators. Alone give slow onset of cure**
ACCELERATORS DITHOCARBAMATES				
Mercure ZDMC	Zinc-di - methyl dithio - carbamate (ZDMC)	25 kg paper bag	Powder	**Ultra fast accelerators. Used alone or as a booster for Thaizole or Sulphenamide accelerators. Most preferred accelerators for Natural/ Synthetic Rubber latex based compounds**
Mercure ZDC	Zinc-di - dithio - carbamate (ZDEC)	25 kg paper bag	Powder	
Mercure ZDBC	Zinc-di - butyl dithio - carbamate (ZDBC)	25 kg paper bag	Powder	
Mercure ZBEC	Zinc-di - benzyl dithio - carbamate (ZBEC)	25 kg paper bag	Powder	
Mercure SBDC	Sodium di - N - butyl dithio - carbamate (SBDC)	200 kg drum	Liquid	
Mercure SBEC	Sodium dibenzyl dithio - carbamate (SBEC)	50/200 kg drum	Liquid	

FINORCHEM PRODUCT RANGE

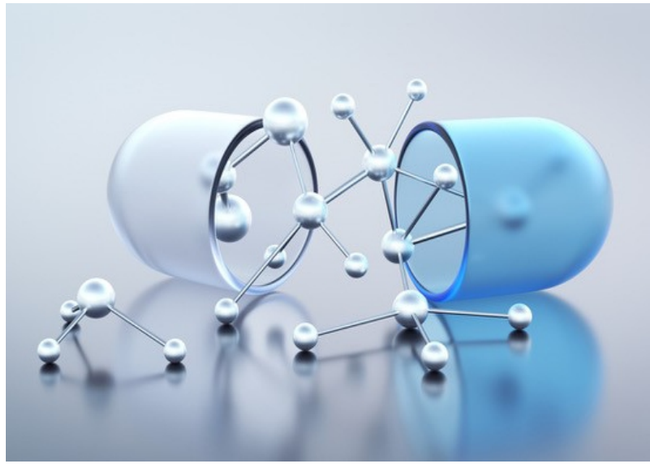
Trade Name	Chemical composition	Physical Form	Standard Packing	Application
ACCELERATORS SPECIAL PURPOSE AMIN				
Mercure AHB	Aniline heptaldehyde condensate	Liquid	50/200 kgs drums	**Ultra fast accelerator, used as booster accelerator in rubber latex products**
ACCELERATORS SPECIAL PURPOSE AMIN				
Mercure AHB	Aniline heptaldehyde condensate	Liquid	50/200 kgs drums	**Ultra fast accelerator, used as booster accelerator in rubber latex products**
VULCANIZING AGENT				
Mertex HD OT - 20	Polymeric Sulfur	Powder oil treated	25 kg paper bag	**At Vulkanising temperature depolmerises to solublesulpur**
SULPHUR DONOR				
Merdonor DTDM	N.N.'-dithiodicaprolactum (DTDC)	Powder	25 kg paper bag	**Eco-friendly Sulphur donor. Vulcanising agent for Semi & EV cure system. Provide excellent heat/ reverion/ageing resistance in NR & SR compound. Non blooming.**
Merdonor DTDC	N.N.'-dithiodicaprolactum (DTDC)	Powder	25 kg paper bag	
PROCESSING AIDS				
Antitack agent VC	Potassium salt of fatty acids	Liquid	200 kg drums	**Very effective antitack agent used for separating unvulcanised rubber sheets Secondary Gelling agent, specially designed ofr use during latex foam manufacturing Mechanical Stabiliser, sprcially designed to improve the stabilty of latex against heatm filler & mechanical working**
Merstab FS	Mixture of amides of fatty acids	Liquid	50 kg drums	
Merstab MSB	Blend of Alpha Olefins Sulphonated type Surfactant	Liquid	50/200 kg drums	
CHEMICAL PEPTISER				
Mertiser	Pentachoro-thio- phenol (PCTP) with activating & dispersing agent	Powder	25 kg paper bag	**Powerful & efficient peptizing agent both on open mixing mill as well as in internal mixer**
Mertiser DBD	2,2' - dibenzamido diphenyl disulfide (DBD) with activating & dispersing aids	Powder/Pellets	25 kg paper bag	
Mertiser DBD 100%	2,2' - dibenzamido diphenyl disulfide (DBD)	Powder	25 kg paper bag	
RETARDERS				
Meretard PVI	N-Cyclohexyl thio-phthaliminde (CTP)	Powder	25 kg paper bag	**Very effective non staining/ discolouring retarder improve the scorch safety & prolong the flow times**

FINORCHEM PRODUCT RANGE

Trade Name	Chemical composition	Physical Form	Standard Packing	Application
RETARDERS				
Meretard PVI	N-Cyclohexyl thio-phthaliminde (CTP)	Powder	25 kg paper bag	**Very effective non staining/ discolouring retarder improve the scorch safety & prolong the flow times**
ANTIDEGRADANTS & ANTIOXIDANTS				
ACCELERATORS- STAINING				
Mernox 6C	N-1,3-Dimethlbutyl-N'-phenyl-p-phenylene-diamine (6PPD)	Pastille	25 kg paper bag/50 kg fibre drums	**Gives good protection against Oxidative Heat ageing, Anti flex cracking, Ozone, UV & metal poison**
Mernox 6C liquid	N-1,3-Dimethlbutyl-N'-phenyl-p-phenylene-diamine (6PPD)	Dark brown liquid	Road tanker	
Mernox IPPD	N-isopropyl-N'-phenyl-p-phenylene-diamine (6PPD)	Pastille	25 kg paper bag	**Gives good, protection against Oxidative Head ageing, Anti flex cracking, UV & Ozone**
ACCELERATORS- STAINING				
Mernox TQ	2,2,4-trimethyl 1,2-dihydroquinoline, polymerised (TMQ)	Beads/Powder	25 kg Paper bags	**Give protection against oxidation & Heat ageing, Rubber poison, moderate protection against flex cracking**
ACCELERATORS NON STAINING				
Mernox SP	Mixture of Styrenated Phenols (SPH)	Liquid	50/200 kg drums	**Give moderate protection against heat & oxidation**
Mernox SP Emulsion	Mixture of Styrenated Phenols (SPH)	Emulsion with water	50/200 kg drums	**Very effective A/O especilaly for NBR. HNBR & ACM rubbers for hight temperature/severe performance. Give synergy with imdazoles,Phenolic & Phosphites antioxidants an excellent non-discoloring, non-staining antioxidant, specially suitable for use in rubber thrrads and latex for carpet backing, foams household and surgical gloves, medical products, baby bottle teats, bath mats, hot water bottles, automotive components, and paper coatings. moderate protection against heat & oxidation if use alone but used primarily as synergistic antioxidant in combination with other antioxidants of both amine & phenolic type.**
Mernox 445	4-(1-methy-1-phenylethyl)-N-4 (1-methyl-1-phenylethyl phentl) aniline	White to off white power	25 kg drums bag	
Mernox CPL	Butylated reaction product of p-cresol and dicyclopentadiene	Cream coloured or amber powder	25 kg drums bag	
Mernox MB2	(4,5)- Methyl - 2 - mercapto benzimidazole	White to off white powder	25 kg drums bag	
CHEMICAL INTERMEDIATE & FLOATING AGENT				
Na-MBT	50% Aqueous Solution of sodium-2-mercapto-benzothiazole (Na-MBT)	Liquid	200 kgs drum or road tanker	**Main intermediate for thiazole & sulphenamide accelerators. Also acts as floating agent for mining, a corrosion inhibitor, metal deactivator**

RITESH INTERNATIONAL LTD. SINCE 1981

Ritesh International Limited



With outstanding quality work and rich industrial experience, we, Ritesh International Limited have emerged as one of the leading manufacturers and suppliers of Stearic Acid (All Grades), Glycerine, and others.

Since our inception in 1981, we are providing superb quality products to our valued customers at national level. Moreover, our ultramodern infrastructural set up not only helps us to produce innovative products but also offer effective packaging solutions to our customers.

Specifications

Product Name	Stearic Acid Wonder	Stearic Acid Wonder	Stearic Acid Wonder	Stearic Acid Wonder
Product Code	RINTL – 36	RINTL – 30	RINTL – 24	RINTL – 18
AV (Min)	201	200	201	188
IV (Max)	< 1	2	8	8
SV (Min)	202	201	202	190
TITRE ©	56ºC	55ºC	54ºC	56ºC
MOISTURE	0.2% (Max)	0.2% (Max)	0.5% (Max)	1% (Max)
COLOUR	3 Unit (Max)	3.5 Unit (Max)	5-10 Unit (Max)	Brown
PRODUCT FORM	Flakes	Flakes	Flakes	Flakes
PACKING	50 kg Bags	50 kg Bags	50 kg Bags	50 kg Bags

HENGHE 恒河 ®

Henghe Materials has been serving in synthetic resin and fine chemical industry for more than 15 years. Especially, Henghe is the hydrocarbon resin producer, manufacturing the diverse kinds of the hydrocarbon resins which meet the customers' needs by offering a wide and innovative technology. Until now Henghe's annual capacity is over 200,000 Metric Tons, and export over 60 countries in the world.

15 Years of Experience in Synthetic Resin & Fine Chemical

Capacity 200000 MT/Annum

Export over 60 Countries

PRODUCTION CAPACITY

C5 Hydrogenated Hydrocarbon Resin	25000 ton/year
C9 Hydrogenated Hydrocarbon Resin	55000 ton/year
C5 Hydrocarbon Resin	25000 ton/year
C9 Thermal Hydrocarbon Resin	40000 ton/year
C9 Catalyst Hydrocarbon Resin	10000 ton/year
C5/C9 Copolymer Resin	15000 ton/year
Coumarone Resin	35000 ton/year
DCPD (Dicyclopentadiene)	15000 ton/year
ENB (Ethylidene Norbornene)	15000 ton/year

C9 Hydrocarbon Resin HENGHE

Item	Softening Point	Color Gardener GS#	Acid Value KOHmg/g	Bromine Number Br cg/g	Features	Application
HHP-1004	100±5	3.1-4.0	≤0.30	≤35	low SP	HMA, Rubber
HHP-1104	110±5	3.1-4.0	≤0.30	≤35	light color	HMA
HHP-1204	120±5	3.1-4.0	≤0.30	≤35	light color	paint, HMA
HHP-1205	120±5	4.1-5.0	≤0.30	≤35	general	paint, HMA
HHP-1304	130±5	3.1-4.0	≤0.30	≤35	light color	paint, ink
HHP-1404	140±5	3.1-4.0	≤0.30	≤35	high SP	ink, adhesive
PR-100-11	90.1-100.0	10.5-11.2	≤0.50	≤35	yellow color	rubber
PR-110-11	100.1-110.0	10.5-11.2	≤0.50	≤35	yellow color	solvent adhesive
PR-120-11	110.0-120.0	10.5-11.2	≤0.50	≤35	yellow color	paint, ink
GML-100	90.1-100.0	16.1-18.0	≤0.50	≤35	coumarone	rubber
GML-110	100.1-110.0	16.1-18.0	≤0.50	≤35	coumarone	waterproofing
GML-120	110.1-120.0	16.1-18.0	≤0.50	≤35	coumarone	asphalt

C5/C9 Copolymer Resin HENGHE

Item	Softening Point	Color Gardener GS#	Acid Value KOHmg/g	Bromine Number Br cg/g	Features	Application
HH2-1003	100±5	2.1-3.0	≤0.30	≤35	light color	EVA based adhesive
HH2-1004	100±5	3.1-4.0	≤0.30	≤35	good compatibility	EVA based adhesive
HH2-1104	110±5	3.1-4.0	≤0.30	≤35	light color	Packaging adhesive
HH2-1204	120±5	3.1-4.0	≤0.30	≤35	high SP	Packaging adhesive

C5 hydrocarbon Resin HENGHE

Item	Softening Point	Color Gardener GS#	Acid Value KOHmg/g	Bromine Number Br cg/g	Features	Application
YH-1288S	95-105	Max. 5	1.0-1.6	Max. 250	Acid modified	Road marking paint
YH-1288	95-105	Max. 5	Max. 0.8	Max. 250	Aliphatic HMA,	Waterproofing
C5-F(A123)	95-105	Max. 5	Max. 0.8	Max. 250	Aliphatic	Rubber Coumpanding
YH-1212	95-105	Max. 4	Max. 0.8	Max. 250	Aliphatic	PSA,HMATape

Dynasol

LND
ISO9001, ISO14001, ISO45001

Solution styrene-butadiene rubber SSBR

Grade	Structure	Total styrene,%	Block styrene，%	Mooney ML1+4,100℃	5% SSV，cP	Main application
S1205	Linear	25	17.5	47	9	Adhesives, vulcanized products, asphalt modification
S1106	Linear	10	7	68	35	mABS, HIPS modification
S1110	Linear	15	10	120	35	mABS, HIPS modification， asphalt modification
S1322	Linear	30	22	130	25	mABS, HIPS modification
S1430	Linear	40	31	176	42	mABS, HIPS modification
S303	Linear	46	11	48	-	Vulcanized products (Transparent shoe sole)

Thermoplastic rubber SBS

Grade	Structure	Total tyrene,%	MFI,190 ℃ ,5kg (g/10min)	5.23% TSV, cSt	25% TSV, cP	Main application
C401	Radial	20	-	18	9700	Compounding, asphalt modification
C411S	Radial	30	-	18	11100	Asphalt modification
C411	Radial	30	-	26	18500	Asphalt modification
C415	Radial	40	-	11	2600	Compounding, asphalt modification
C711	Radial	30	-	26	18500	Compounding, adhesives, asphalt modification
C500	Linear	30	5	8	1100	Compounding, adhesives, asphalt modification
C501	Linear	31	-	13	5000	Asphalt modification， compounding
C501H	Linear	31	-	16	8000	Asphalt modification， compounding
C540	Linear	40	5.5	6	600	Compounding， adhesives
S4301	Linear（SB 20%）	33	-	13	3000	Adhesives, compounding, asphalt modification
S4302	Linear（SB 20%）	31	6.5	7	890	Adhesives, compounding, asphalt modification
S4318	Linear（SB 80%）	32	6	7	700	Adhesives, compounding, asphalt modification

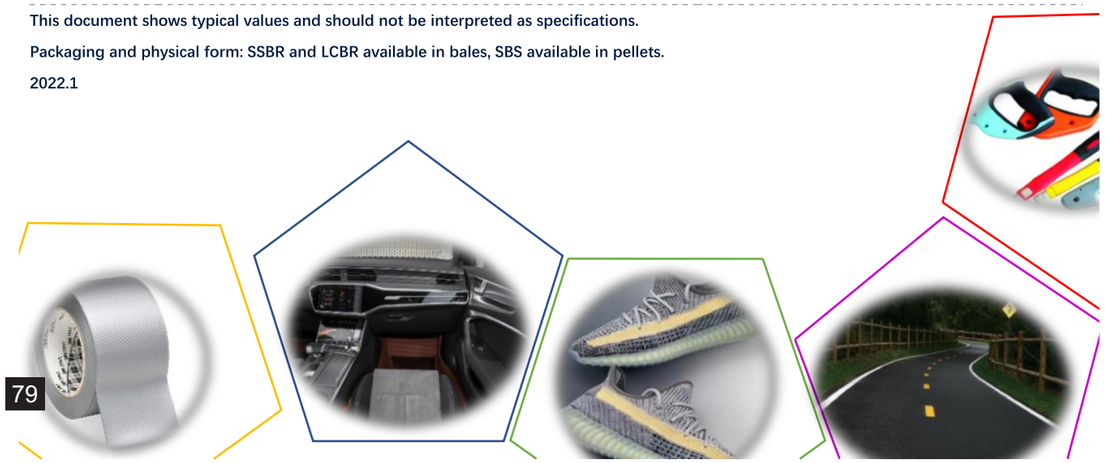
Low CIS polybutadiene rubber LCBR

Grade	Structure	Mooney,ML1+4,100℃	5% SSV，cP	Main application
S255P	Radial	53	150	mABS,HIPS modification, vulcanized products
S233P	Radial	35	75	mABS,HIPS modification, vulcanized products
S297	Radial	45	36	mABS,HIPS modification, vulcanized products
S298	Radial	60	50	mABS,HIPS modification, vulcanized products
S299	Radial	37	25（5.43% TSV）	mABS,HIPS modification, vulcanized products
S200	Radial	49	-	Vulcanized products

This document shows typical values and should not be interpreted as specifications.

Packaging and physical form: SSBR and LCBR available in bales, SBS available in pellets.

2022.1



VVTI PIGMENTS PVT. LTD. one of the world's largest manufacturers and exporters of Titanium Dioxide (TiO2) has its own state-of-the-art manufacturing facility located in Tamilnadu. Besides TiO2 VVTi also manufactures Ferrous Sulphate Hepta Hydrdate ($FeSO_4$ $7H_2O$) and Ferro Gypsum and continues to explore possibilities of adding more value-added products.

VVTI Pigments Pvt. Ltd

TITANIUM DIOXIDE

The most commonly used white pigment in the world!

With its versatile applications Titanium Dioxide has made a revolution in several industries and has become the most commonly-used white pigment in the world. More than four million tonnes are used annually for diverse industrial applications like manufacturing of Paint, Toothpaste, Cosmetics, Paintings Inks, Textiles and Plastics among other products.

SPECIFICATIONS OF OpaTi - Titanium Dioxide (ANATASE)

Application	Rubber Application
Odour	Odourless
Colour & Texture	White Soft Dry Powder
pH of the Pigment (20% slurry)	6.00 - 8.00
Purity as TiO2 % by mass	99.8 Min
Matter soluble in Water % by mass	0.30 Max
Residue on 45 microns IS sieve, % by mass	0.07 Max
Oil absorption, % by mass	21.0 - 23.0
Loss on drying, % by mass	0.35 Max
Reducing Power	Match with Standard
Dispersion	Excellent
Iron as Fe, ppm by mass	32.0 Max
L*	98.5 Min
A*	0.10 to 0.15
B*	1.30 - 1.60
YIE 313	2.45 - 3.00
WI CIE	90.0 min
457 Brightness	94.5 min

RICL

Facilitating Businesses for Enhanced Efficiency

Certificate of Registration

This is to certify that

Rajshila Synthetics Private Limited

Corp. Office: Room No. - 116 And 117, First Floor, NDM - 2, Plot No. D-1, 2, 3, Wazirpur Distt. Centre, Netaji Subhash Place, North West Delhi, Delhi - 110034, India.
Warehouse (Delhi): Khasra No 391, 408 & 409, Extended Lal Dora, Alipur, Delhi - 110036 India.
Warehouse (Haryana): Plot No. 105, Sector - 06, Faridabad, Haryana - 121006 India.
Warehouse (Kolkata): Dag No. 161, 2266, 2267, 2268, Sankrail Industrial park, Bhagabatipur, Howrah - 711302, West Bengal, India.

has been assessed by RICL and found to comply with the requirements of

ISO 9001 : 2015
Quality Management Systems

For the following activities:

Import, Warehousing and Distribution of Natural & Synthetic Rubbers, Polymers, Filler, Activators, Colourants, Curatives (for Both Peroxide & Sulphur Systems), Plasticizers & Tackifying Agents, Cleaning Agents, Blowing Agents, Processing Aids, Pharmacy Grade Plastic Granules, Waxes and Allied Products & Chemicals.

This Certificate is Valid from 16/07/2025 Until 15/07/2026

Date of Initial Certification: 05/08/2022
Date of This Certification: 16/07/2025
Ist Surveillance on or before: 15/06/2026
IInd Surveillance on or before: 15/06/2027
Certification Valid Until: 15/07/2028

Certificate No.: 25RN07DT

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT IAF

UNITED ACCREDITATION FOUNDATION UAF

CB-MS-2606

This certificate can be verified at www.iafcertsearch.org, www.uafaccreditation.org or at www.ricliso.com
United Accreditation Foundation INC, 1060 Laskin Road, Suite 12B/13B, Virginia Beach, VA 23451, USA

Director
Royal Impact Certification Ltd.
623, Tower-B, iThum, Plot No. A - 40, Sector - 62, Noida 201301, India.
www.ricliso.com, info@ricliso.com
Phone : +91 120 4113893

UAF is member of International Accreditation Forum (IAF). Its membership status can be verified at www.iaf.nu. This Certificate remains the property of Royal Impact Certification Limited. Must be returned on request or if certificate is withdrawn. Validity of this certificate is subject to successful surveillance audits as per dates given above.

RAJSHILA

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New Delhi-110034

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Amit Agarwal : +91 99100 15465
Kapil Goyal : +91 99901 98000

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Phone : +91 98103 05395
Email : info@rajshila.com
Website : www.rajshila.com

Warehouse Facility

Delhi
KH NO. 391, 408 & 409
Extended Lal Dora, Alipur
North West Delhi, Delhi, 110036

Haryana
Plot no. 105, Sector-6
Faridabad, Haryana, 121006

West Bengal
Dag No. 161, 2266, 2267, 2268
Sankrail Industrial Park
NH 6 within mouza, Kandua
Bhagabatipur, Howrah
West Bengal, 711302

Notes