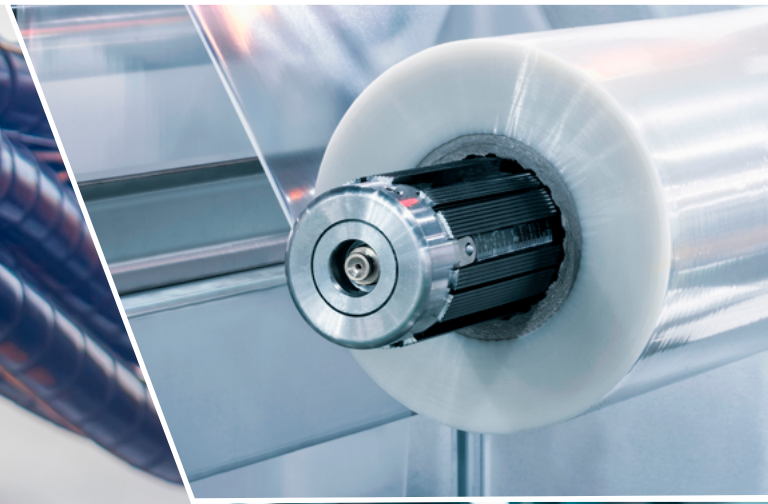
suministro de especialidades

a Formerra company

Rubber, adhesives, plastic and coatings



PRODUCT

CATALOG

SUMINISTRO DE ESPECIALIDADES

MEXICO CITY | GUADALAJARA | MONTERREY

OPERATION SYSTEM

The customer service hours of Suministro de Especialidades, S.A. de C.V. are Monday through Friday from 8:30 a.m. to 5:00 p.m..

However, we appreciate you taking into account that, since we follow the ISO 9001:2015 standard and everything it requires, the **cut-off time for orders is 4:00 p.m.** Therefore, to ensure that orders are delivered the following business day, they must be placed before this time.
Orders received via email will be subject to approval by the Delivery System, which will give preference, out of ethics and respect, to orders from those companies that requested the service on time.

NEXT DAY DELIVERY SERVICE

Orders placed by phone are delivered to your home the next business day between 10:00 a.m. and 5:00 p.m. This service is only available in the greater metropolitan area of Mexico City, CDMX; Guadalajara, Jalisco; and Monterrey, Nuevo Leon.

For customers from other states in the country, shipments can be shipped by the freight line of their preference.
In these cases, the commitment of Suministro de Especialidades, S.A. de C.V. regarding delivery times ends when the merchandise is shipped, and the guide number is notified.

WAREHOUSE SERVICE FROM 10:00 TO 16:00

In case of immediate need, upon confirmation, materials can be picked up the same day, Monday through Friday from 10:00 a.m. to 4:00 p.m., at our warehouse located at Pastores # 30, Col. Santa Isabel Industrial, Mexico City, CDMX, 09820 – one block from the intersection of Av. Ermita and Tláhuac, and Atlalilco being the closest metro station -; or at the addresses of the branches listed below.

ANTICIPATE YOUR ORDER

If you place your order in advance by phone, we will be able to serve you more quickly and efficiently.
To place orders and establish formal commitments, it is necessary to contact us to confirm stock and availability, as well as to know the price of the different materials and the US dollar/Mexican peso exchange rate of that day.

aurorium

ARKEMA

Celanese

Denka

DOW®

EVONIK
Leading Beyond Chemistry

H.B. Fuller | CILBOND

POLYSCOPE
A Vertellus™ company

SARTOMER

Stoner

TSE

CONTACT US

Although we have several email addresses to communicate with you, in case of urgent orders or communications, we would greatly appreciate it if you could use the following one: **administrator@sde.com.mx**

Mexico City, CDMX

- (55) 56 85 28 88
- (55) 35 48 90 00
- (55) 35 48 89 90

Pastores # 30
Col. Santa Isabel Industrial.
09820 Mexico City, CDMX.

Zapopan, Jalisco

- (33) 16 55 72 09
- (33) 13 68 62 04

Ixtepete Street # 4814
Col. El Briseño
(Between Tlalpan and Av. de las Torres).
45236 Zapopan, Jalisco.

Escobedo, Nuevo Leon

- (81) 83 01 20 06
- (81) 83 01 31 52

Industrias del Bronce # 218
Escobedo Industrial Park.
66062 Escobedo, Nuevo Leon

Emergency numbers, Telmex: (55) 3548-9000, (55) 3548-8999

WARNING

The technical disclosure of information offered on these pages is done in good faith, with the simple purpose of sharing laboratory experiences, either our own or those of third parties, with their authorization.

The characteristics of the materials, their probable formulations and the results obtained must be approved and authorized by each manufacturer, who may approve or reject them depending on their own experience.

As every manufacturer knows, there are no recipes that can be followed exactly, since conditions vary from one piece of equipment to another and the characteristics of each material vary depending on brands, manufacturing batches, process temperatures and combinations with other materials. We consider that working with rubber is not a science, but rather a theory that must be tested in each workshop. Nonetheless, we trust that the information will be useful in your laboratory work for the development of your own formulations, the study of the materials to choose and the determination of your own manufacturing processes.

Chemours™ Continental Carbon® CRAY VALLEY A BRAND OF TOTAL

heubach brighter colors-brighter life LAMBSON LG Chem

US SILICA Vantage ZEON ZN ZINC NACIONAL

TESTS IN SDE LABORATORIES

RHEOMETRY (ASTM D-2084): Determines the vulcanization time of a rubber, which is the basis for determining the necessary adjustments in vulcanization times, in order to modify the acceleration and shorten or increase it as required.

MOONEY VISCOSITY (ASTM D-1646): The test with maceration is for raw material control, and without maceration it is applied to already mixed compounds to verify their processability. That is, at high viscosity values in a rubber, there is greater difficulty in flow, and vice versa. At lower viscosity, the capacity to flow is greater, so it is an important parameter for all processing forms.

DENSITY (ASTM D-297): Test used for raw material control of solid materials, or in already mixed materials to calculate costs.

HARDNESS (ASTM D-2240): Based on the principle of the rubber's resistance to deformation caused by an indenter, it is one of the most common for the control of compounds depending on the application. That is, in a rubber, if its hardness decreases, the deformation caused by applying the same force will be greater; or vice versa, if its hardness increases, the rubber will deform less due to its rigidity.

TENSION (ASTM D-412): This test indicates the resistance of the material when opposing forces are applied to it and is one of the most common tests for checking composites. A material with low tension values will not withstand high stresses, just as a material with high values will increase its resistance when a stress is applied to it.

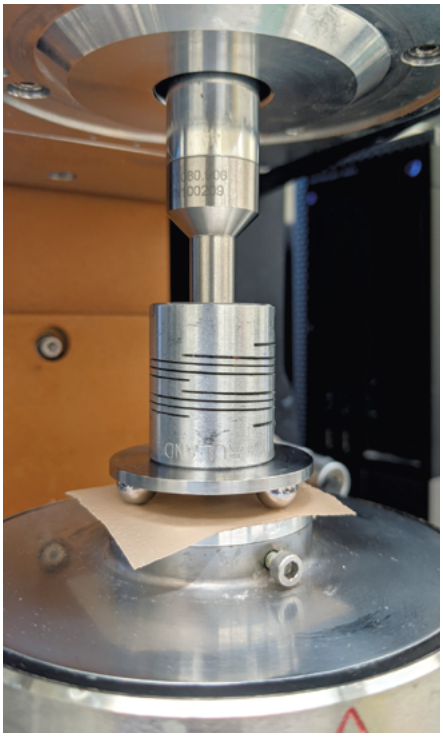
ELONGATION (ASTM D-412): This test measures the material's ability to stretch or undergo deformation when two opposing forces are applied. It is also one of the most common tests used to verify the quality of a material. If the material in the application requires good resistance to elongation and this material does not have it, it will tend to break immediately.

TEARING (ASTM D-624): This test determines the resistance of a material to the propagation of a fissure or crack when subjected to stress. If a material does not have the capacity to resist a crack, it will immediately break when subjected to stress.

COMPRESSION SET (ASTM D-395): Also known as permanent compression test. It measures the capacity of a rubber to maintain its original state when a force is applied in the form of compression, sometimes simulating the conditions to which the final product will be subjected.

AGEING IN AIR (ASTM D-573): This test measures the resistance of the material when it is subjected to hot air. In other words, specimens with the same original properties are subjected to ageing in an oven in which hot air is circulating, under the conditions to which the final piece will be subjected. After this ageing, the values of these tests are tested and compared to the original values. High values in the changes after aging indicate that the material will not adequately withstand the final use and will quickly lose its properties during use.

AGEING IN LIQUIDS, FLUIDS, FATS (ASTM D-471): Tests in which the resistance of the compounds to a material established in the ASTM standard (ASTM I oil, IRM 903, FUEL A, FUEL B, etc.) or to the real contact materials of the part is measured, also measured after ageing under conditions similar to those to which the final part will be subjected. The tests that are originally measured are taken and identical specimens are subjected to ageing, comparing the values obtained after aging against the original values. High values in the changes after ageing indicate that the product will not adequately withstand the liquids, fluids, or greases to which the final product will be subjected.



PRODUCT CATALOG

PROCESS OILS

Essential ingredient **to facilitate mixing, reduce hardness, increase elongation, and improve behavior at low temperatures**.

Process oils, also known as plasticizers, play a crucial role in lowering the viscosity of compounds to enhance their processability in elastomers. These oils function as hardness reducers by positioning themselves between the polymer chains of the elastomers. This interlayering facilitates easier sliding and decreases hardness at the macromolecular level:

- **White and dark rubber blends of SBR, neoprene or CSM,are used in: :**
  - **344 Aromatic Oil:**The higher aromatics content allows compatibility with relatively high styrene content elastomers, as well as chlorinated rubbers.
- **Clear blends of natural rubber contains, SBR, neoprene and CSM:**
  - **301 Naphthenic Oil.**
  - **305 Naphthenic Oil.**

Naphthenic oils primarily consist of cyclic alkanes. These oils are very clear or somewhat clear and are versatile, making them compatible with a wide range of compounds

The following Paraffinic oils are recommended for **Nordel® EPDM** and Butyls:

- **323 Oil.**
- **324 Oil.**

I Paraffinic oils primarily consist of linear alkanes, making them ideal for plasticizing EPDM and butyl compounds due to their chemical compatibility. We offer two grades of paraffinic oils, each differing mainly in viscosity.

PLASTICIZERS FOR NITRILES, CSM, PVC AND PLASTISOLS:

- **Terephthalics: TOD**. Colorless and slightly viscous in appearance, this liquid is used to plasticize relatively polar polymer matrices. Being a diester derivative of terephthalic acid, it is claimed to be free of phthalates.

  In nitrile rubber, it provides more resistance to high temperatures and lowers hardness.
- Phthalates: Dioctyl Phthalate (**DOP**).
- Adipates: Dioctyl Adipate (**DOA**).
- Sebacates: Dioctyl Sebacate (**DOS**).

SPECIALTIES

- **Corn oil**. Edible oil; also has applications in the ink and textile industries.
- **Pine oil**. Basically, it can be emulsified to make cleaning products.
- **Silicone fluids from 100 to 60,000 cPs**. Paraffinic oils primarily consist of linear alkanes, making them highly compatible for plasticizing EPDM and butyl compounds due to their chemical affinity. We offer two grades, each distinguished by its viscosity.
- **Oil (DBEEA). Plasticizer to reduce hardness**; very useful in polyurethane, but also highly effective in nitrile, polyacrylate and epichlorohydrin.

ACCELERATORS

Accelerators are the essential ingredient for vulcanizing and developing the properties of the base rubber. There is a wide variety, and we have one specific option for each application.

SULFUR BASED

PREDISPERSED

MIXLAND®+ AND MIXLAND NEW GEN.

They come in 75% and 80% concentrations and are filtered through different meshes to prevent the presence of lumps or impurities.

- **Mixland®+** utilizes a patented process to disperse within the finest *binder* available. This process incorporates polyacrylate, which enhances the blending of different polymers. Not only does polyacrylate serve as a chemical carrier, but it also acts as an additive, improving the mixture's uniformity and enhancing the chemicals' effectiveness during the mixing process.
- **Mixland® New Gen** utilizes identical raw materials and filtering techniques but does **not include polyacrylate**. The *binder* is composed of EVA or EPDM.

By employing various mesh filters, we can eliminate surface imperfections, thereby reducing waste and enhancing the reactivity of the substances. Proudly produced in France, Mixland® New Gen is highly regarded across Europe and trusted by manufacturers of premium products in Asia.

SULFUR DONORS

DTDM (DITHIOMORPHOLINE) SULFUR DONORS.

Highly efficient in vulcanization. Low volatility and low toxicity. Suitable for high quality and safety applications. Improves heat and aging resistance.

MIXLAND®+ S 80.

Sulfur in 80% dispersion. 80 parts sulfur and 20 parts *binder*. The *binder* contains polyacrylate for better dispersion of many elastomers with diverse polarities, as it acts by homogenizing their polarity. Not only does it disperse the sulfur more quickly and uniformly, but it also causes better performance throughout the mixture.

VULTAC® TB7 AND TB10.
Non-staining multifunctional accelerators. Tack promoters. They act as antioxidants. They provide excellent mechanical properties and good flexural strength. The reason for their excellent performance is that they are polytertbutyl phenols that provide high thermal stability and high *tack* capacity without sacrificing the advantages of a sulfur-based vulcanization.

IN POWDER, GRANULE, OR PRE-DISPERSION PRESENTATIONS

ULTRA-ACCELERATORS

- **Carbamates: ZDMC, ZDEC, ZBEC, ZDBC, ZDEC**. The most active dithiocarbamate ultra-accelerator is **ZDMC**. It is traditionally used in latex systems.The safest nitrosamine-free dithiocarbamate ultra-accelerator is **ZBEC**.
- **Guanidines: DPG**. Slow accelerator, modulator of thiazoles and sulfenamides. Nitrosamine-free.
- **Hexamethylenetetramine.** Favorite crosslinking agent in various applications. Widely used in the abrasive industry for resinous discs.
- **Lead oxide**. Yellow litharge. Hydrogen chloride acceptor in chlorinated polymers.

ACCELERATORS AND ULTRA-ACCELERATORS

Predominantly produced in China due to the regulatory environment in Western nations. Out of 250 manufacturers, only around 10 have consistently delivered production showcasing qualities suitable for automotive, aerospace, and high-performance industrial applications. We collaborate with the top 3 of these producers, ensuring stable and uniform materials

CLASSIFICATION

- **Sulfenamides: CBS, TBBS, MBS.** With intermediate acceleration curves in vulcanization, but with high modulus. They provide better *scorch* safety than thiazoles.
- **Thiazoles: MBT, ZMBT, MBTS.** Common primary accelerators that modulate the vulcanization speed of secondary accelerators.
- **Thiurams: TMTD, TMTM, TBzTD.** They function as secondary fast accelerators providing high modulus and low *scorch*.
  The most bitter are **MBT, TMTD, OBTS** and **TBBS**.
- **Thioureas: ETU, DETU.** Ideal for chlorinated rubbers, such as **chloroprene**.
- **Nitrosamine free: ZBEC, TBzTD** and TBBS. TBBS does not generate nitrosamines, while ZBEC and TBzTD generate safe nitrosamines, unable to be absorbed by the body.
  - **Micro®:** In addition to the Asian ones, from Mexico we offer the traditional Micro® line: **Vulmic® CBS, MBT, MBTS, OBTS, TMTD, TMTM, TET, ZDB, ZDE.**

PEROXIDE LINE

Dicumyl, dichlorobenzoyl, dimethylhexane, diterbutyl.

- **Dicumyl peroxide** is the most versatile. It does not come from China like others. It is produced in Korea through safer cutting-edge technology. The others are generally used in silicone formulations and are from the **Luperox®** brand.
  Dicumyl peroxide is ideal for **Nordel®** and **silicone bases** in general.
  For those who buy silicone bases from us, we have a powder presentation that makes dispersion easier.
  It works very well in the **FOAMI** process.
  Luperox® is used when specific properties are required, especially when seeking a curing option with less dangerous volatiles. , This is often the case with parts that will be in contact with food.
  Luperox® is used in different types of elastomers but is widely used in silicone.
- **Luperox® 101 XL45**: Powder, 45% concentration, easy to weigh.
- **Luperox® 101**: Liquid. High purity, between 91 and 93%. A higher concentration allows for adding a smaller quantity and better dispersion.

SPECIALTIES

- Latex accelerator: **Dismic® 9**. Excellent modulus properties and rapid vulcanization are achieved with quantities between 4 to 6 phr.
- **Mixland®+ ETU 80**.Predispersed accelerator for neoprene with additive.
- **Accelerator for Viton®**: Viton® Curative (previously Diak® 1, 3 and 7). Used in grades that do not include the bisphenol-based curative or as a curing co-agent.

SPECIALTIES BY APPLICATION

ACTIVATORS

Activators enhance the effect of accelerators, ensuring efficient vulcanization and optimal properties for the final compound.

STEARIC ACID

- **Vstearin®, Vantage®** USA stearic acid. Known for their high purity, these stearic acids are widely used in **rubber, plastics, and cosmetics**.
- **Grades SA 29, SA 10** (hydrogenated) and **SA 11** (Triple pressed). Our recommendation is to use the first option in rubber applications, the second in plastics, and the third in cosmetics. However, this is not a strict rule. Some cosmetic formulators, for example, prefer to use SA 11 for **liquid creams** and SA 10 for **thick creams**.

  SA 10 is a hydrogenated fatty acid, making it the best choice among the three options. Its hydrogenation reduces susceptibility to oxidation at the double bonds, which is ideal for high-performance cosmetic products

METALLIC STEARATES

- **Calcium** stearate.
- ***Kosher* calcium** stearate.
- **Magnesium** stearate.
- **Sodium** stearate.
- **Zinc** stearate. High purity. Improves translucency and activates acceleration system.

Additionally, stearates like calcium and zinc serve as stabilizers in PVCv.

METAL OXIDES

They initiate vulcanization as they work alongside accelerators to drive the process.

- **Magnesium oxide** (powder and pre-dispersed). The role of magnesium oxide within chlorinated polymers is fundamental since it acts as an acid acceptor and co-catalyzes the vulcanization of chlorinated elastomers.
- **Elastomag® 170** magnesium oxide. Powder.
- Co-activator for **Viton®**. Neoprene formulations.
- **Scorchguard™**. Pre-dispersed magnesium oxide.
- **Zinc Oxide** (powder and pre-dispersed for rubber).Used in multiple applications, from industrial to pharmaceutical, depending on the degree of purity required.

  Zinc oxide offers numerous benefits. It serves as a zinc source for vulcanization catalysis and adds antibacterial properties to the polymer it is incorporated into

POWDER

- **Maximo® 955X** (rubber in general).
- **Maximo® 920** (rubber in general).
- **Oxzinal® 802** (Gold Seal). Rubber in contact with food.
- **Oxzinal® 821** (also known as Green Seal, White Seal, Active). For translucent formulations.

PRE-DISPERSED:

- **Mixland®+ ZnO 80** GAF 140 is a high-quality zinc oxide blend, comprising 80 parts zinc oxide and 20 parts *binder*. Filtered through a 140 mesh, it ensures the smallest particle size for optimal performance. The patented polyacrylate enhances compatibility between the metal and polymer, resulting in improved zinc activation within the acceleration system. This leads to reduced mixing time, minimized scrap, and superior final product characteristics.

HYDROXIDES

- Calcium hydroxide **powder**.
- **Viton™** fluoroelastomer activator. Purity: laboratory reagent. Activates vulcanization allowing to achieve better mechanical properties.
- **Rhenofit™ CF.** Pre-dispersed calcium hydroxide which ensures greater activation.

ADHESIVES

Rubber-to-metal bonding is critical in automotive and industrial parts such as rollers and bearings. Best-in-class field-proven lines.

- **Cilbond® Line.** Adhesive systems that bond more polymers using fewer grades, unlike the competition.

  English brand specialized in rubber-metal adhesion. Monolayer and bilayer.
  - Adhesion of **brake pads** with **Cilbond® 62W**, water based. It also bonds elastomers and polar polymers such as **PVC**, **nitrile**, **epichlorohydrin**.
- **Cilbond® 7290W**. For bonding non-polar elastomers where environmental care is key and reducing emissions to the atmosphere is necessary, use the new **Cilbond® 7290W**, a single-coat water-based product for rubbers such as: **natural rubber**, **EPDM** and **SBR**.
- **Pangofol®**: rubber to vulcanized rubber adhesion.
- **Thermoplastic polyurethane TPU for adhesives**. 3 viscosities. Bonds PVC and other moderately polar substances.

ADDITIVES

Additives impart specific properties or improve some particular characteristic to the finished part or facilitate the mixing and flow of the rubber compound.

PINE TAR

Plasticizer and filler dispersant, *tack*ifier in various rubbers. Typically used in dark compounds due to its natural color, it greatly enhances the mixture's *tack*iness.

FACTICE

- **Rhenopren® ZD**. Germany.
- **Micro®** brown factice.
- **Micro®** white factice.
- **Micro®** roller factice.

Factice compounds improve the rubber's absorption capacity on plasticizers. They also function as a processing aid for extrusion, giving a smoother and more uniform appearance to the compound.

OPACIFYING AGENT

Atsacover® DHW, titanium dioxide **whiteness-extending** filler. In water-based paints it provides **whiteness**, **covering power** and **tinting power**.

POLYBUTADIENES DISPERSED IN SILICATE

- **Ricon® 152 DA.**
- **Ricon® 153 DA.**

Vulcanizing coagents in solid form can enhance the mechanical and rebound properties of a compound without the measurement issues that come with liquid polybutadienes.

CHLORINATED PARAFFIN

- **Liquid** chlorinated paraffin.
- **Solid** chlorinated paraffin.
- **Chlorinated oligomers** provide anti-flame properties to certain elastomeric matrices. Their dosage ranges between 5 and 20% by weight/weight.

MOISTURE SEQUESTRANTS

- **Diethylene Glyco**l. Hydrophobizing of both acidic white fillers and silica. It balances the pH and allows better dispersion of silica in elastomeric matrices. It activates moisture-inhibited vulcanization of white fillers and activates the silica surface for silanization.
- **Calcium oxide powder**. Moisture sequestrants.

SILANES

- **SI69**. Chemical bond formation between silica and rubber. Improves tension, tear, abrasion. **Evonik®**.
- **DYNASYLAN® GLYMO**. Hydrophobization of silicas in peroxide-based systems. Improves tension and abrasion resistance. **Evonik®**.

MISCELLANEOUS

- **PEG 3350, 4000, 6000** polyethylene glycols. Used as viscosity controllers, humectants, and substance solubilizers in cosmetics. They can also be used as process aids due to their lubricating behavior in various polymeric matrices.
- **Triethanolamine.** Neutralizer in cosmetic formulations, pH regulator. Furthermore, being a tertiary amine, it can function as an alternative electron donor in UV curing compositions that require a donor amine.

SCENTS

- For rubbers and plastics.
- **Bubble gum** .
- **Fruits of the forest**.
- **Lavender**.

ANTI-MICROBIAL AGENTS

ZINACRON® NANOANTIBAC

For plastics, rubbers, and coatings. Due to their nanoparticulate size, they have proven to have high bactericidal efficiency. In addition, they have high activity against viruses that are part of the Coronavirus family.

EMULOZONE®

Ozonized oil from natural sources for antimicrobial function in **cosmetics** and **disinfectants** due to its slow release of ozone molecules at the site of application local.

ANTISTATIC

Prevents the accumulation of static electricity by facilitating its discharge to ground.

HOSTASTAT®

Due to its structure, this alkane sulfonate can be added either directly to the thermoplastic for extrusion or can also be pre-dissolved in distilled or deionized water to be added by spraying to the surface.

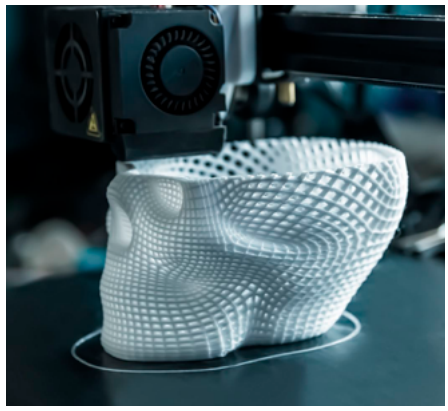
ANTIOXIDANT AND ANTIOZONANT

They are essential to improve resistance to the environment and oxidizing atmospheres or ozone.

IN CLEAR COMPOUNDS

(FDA QUALIFIED):

- **Vulkanox™ BHT**. Non-staining antioxidant, ideal for thermoplastics, elastomers, and petrolatum wax products. Being a hindered phenol molecule, it provides enormous stability to the system.
- **Octylated diphenylamine**. Antioxidant that offers excellent resistance to degradation by heat or oxidation. Recommended for EPDM, nitrile, and neoprene rubbers.
- **Styrenated phenols**. Protect against oxidation and heat.
  - **Liquid Inox® EF**. General rubber compounds. Higher concentration.
  - **Inox® EF Emulsion**. For latex.
  - **Powder Inox® EF**. General rubber compounds.
  - Benzimidazoles.
- **Mixland® MMBI**. Produces a powerful synergistic effect when combined with other antioxidants and is non-staining. Can be used in light and dark compounds. Protects from oxygen, heat, and cracking. Nitrosamine-free.



IN DARK COMPOUNDS

Better protection against oxidation and heat on dark compounds.

- **TMQ (TQP)**. Stain. Dark parts only. Polymeric stabilizer to protect against oxidative degradation by functioning as a high-efficiency free radical scavenger.
- **Imidazoles.**
- *p*-phenylenediamine (**6PPD**). Powerful antioxidant and antiozonant that protects against aging and degradation. **Natural** and **synthetic rubbers**. Improves resistance to flex fatigue.

ANTIOZONANT WAXES

- **Antilux™ 654**. Wax for protection of rubber compounds against the effects of ozone and environmental wear.

PHYSICAL PROCESSING AIDS

They help blend and incorporate all the formula's ingredients efficiently. By shortening the mixing time, they also lower electrical energy consumption and assist in properly filling the molds

WAXES

Waxes and paraffins protect against ozone and help in the fluidity of the compound. In addition, under appropriate conditions (with the aid of a surfactant dispersant) they can be emulsified for other types of applications such as mold release waxes, car waxes, etc.

- **CanWax®** wax. Soft paraffin.
- **Water drop** wax. White paraffin.
- **Microcrystalline** wax. Dark, hard paraffin.
- **Carnauba** wax. Grade 3: industrial.
- **Polyethylene waxes**. Ideal for thermoplastic processing.
- **T 100 polyethylene wax**. With melting point close to 100 °C.
- **Licowax® OP P** wax – Wax derived from a partially saponified ester, widely used in PVC and engineering resins such as polyamides, polyesters and their masterbatches. It is used to reinforce polypropylene compounds and thermoplastic and thermoset elastomers.
- **Licowax® LP** wax - Montanic acid wax that helps in the emulsification of paraffins, has release and protective properties, and is also easy to handle since the resulting emulsions can be made in open containers.

PEPTIZERS

They break the rubber nerve at the beginning of the mixture.

- **Microplast®** peptizer.

CHEMICAL PROCESSING AIDS

They improve the fluidity of the rubber compound and its mechanical properties.

AFLUX®

- **Aflux®12 NS**. Processing promoter is based on a mixture of fatty acid esters and hydrocarbons for dispersion of components in rubber compounds such as natural rubber, SBR, NBR, etc.
- **Aflux®16**. he processing promoter is mainly used for EPDM and butyl rubber, though it is also effective with other elastomers. It helps to lower the compound's viscosity and enhances slip at the interface between the compound and metal.
- **Aflux®42**. An outstanding dispersant for fillers and rubber chemicals, it enhances the plasticity of compounds awaiting curing and improves their flow characteristics. Perfect for use in extruded and calendered sheets, it is effective with elastomers like natural rubber, acrylics, SBR, polybutadiene, and EPDM, etc.

STRUKTOL®

- Struktol™ **A 60**. Peptizer for natural rubber.
- Struktol™ **WB 16**. Lubricant, process additive.
- Struktol™ **WB 222**. Dispersant additive for rubber fillers.

VESTENAMER™

It homogenizes and reduces the viscosity of the compound, making it easier to handle. It also enhances the banding process in natural rubber and increases green strength, making it ideal for extrusion. High-performance tires or parts require this processing aid.

With **Vestenamer™**, it is possible to **recycle** your own scrap.

FILLERS

Reinforcing fillers, available in both white and black, enhance the mechanical properties of base rubber. Some fillers offer additional benefits like acting as matting agents, preserving transparency, and aiding in processing. We also provide extenders to help reduce costs

REINFORCING WHITE FILLERS

AEROSIL® 200, 380, R 972 AND R 974

Pyrogenic silicon dioxide consisting of microscopic particles of amorphous silica fused into larger particles. They have a strong thixotropic effect and may be hydrophilic or hydrophobic.

They can also be used in thermoplastics as reinforcing fillers in low proportions, rheological control agents, etc.

ULTRASIL®

- **Ultrasil® VN3.** Silicon dioxide. is a crucial component in enhancing the mechanical properties of rubbers, especially in clear compounds. By incorporating **Ultrasil® VN3**, the carbon black content in tires can be significantly reduced, contributing to green tires. Additionally, the balance between carbon black and silica allows for the creation of specific tread patterns suited for various terrains. This balance helps in controlling the properties of the compounds more effectively. **Ultrasil® VN3** is available in both powder and granular forms, minimizing fugitive dust during manufacturing processes.

- **Ultrasil® 7000**. Precipitated silica that is easily dispersed and highly reinforcing. Widely used in green tires and high-performance rubber products, it offers exceptional abrasion resistance.

SIPERNAT®.

Precipitated silicas and silicates produced under strict parameters of surface area, particle size and purity, thereby achieving high oil absorption, and consequently, liquid absorption.

- **Sipernat® D13**. Fine particle hydrophobic silica.
- **Sipernat® D17**. Fine particle hydrophobic silica.
- **Sipernat® D320**. Medium-sized, medium-absorbing silica. Vehicle for liquids, anti-caking agent for powders, modifier in protective coating formulations, surface modification of plastics.
- **Sipernat® 820 A**. Very fine particle aluminum silicate. High leve of whiteness.
- **Sipernat® 22LS**. Silica that works as a thickener and has a high absorption capacity. It also works as a free-flowing agent in granules or pellets.
- **Micronized white baryte** (barium sulfate). High-density white filler. Provides hardness to the Viton®.
- **High purity graphite powder**. It can function as a lubricant and to impart certain electrical and thermal properties to rubbers.

MINUSIL®

Filler for silicone rubber bases. **U.S. Silica®**.

- 5M.
- 10 M.
- 15M.

High purity silica ensures consistent and repeatable performance. It provides increased density,thermal conductivity, hardness and chemical resistance.

SEMI-REINFORCING WHITE FILLERS

- OMYA® **micronized** calcium carbonate.
- **El Nevado® precipitated** calcium carbonate.

Calcium carbonate is ideal for providing a better appearance to paint formulations and giving them better performance.

MISTRON VAPOR® TALCUM

Magnesium silicate that serves as a filler but does not proportionally increase hardness. Dry lubricant.

- Mistron® **353A**. Particle size 6 μm. Provides rigidity and high deflection temperature.
- Mistron® **Vapor RE**. Particle size 2.2 μm. For dark products, it provides processability and toughness.
- Mistron® **Vapor Rubber**. Particle size 2.2 μm. For clear products. Provides good processability and toughness.

ALUMINUM SILICATES

Filling to reduce cost.

- Caolin **Hard Clay®**.
- Caolin **Silal®** 300.

CELITE®

Diatomaceous earth is a reinforcing filler known for providing excellent resistance to permanent compression deformation. It works effectively in **Viton®** as long as the pH level is between 11 and 14. If the pH is acidic, it can interfere with the bisphenol-based vulcanization process.

In such scenarios, it's better to use micronized white barite or fine-particle precipitated calcium carbonate as alternatives In paints it is an **extending** and **matting agent**.

For thermoplastics, as an anti-blocking agent, ***Celite® Superfloss*** performs adequately.

REINFORCING BLACK FILLER

Carbon black is the top reinforcing filler of choice for elastomers. It provides unparalleled tensile, elongation and tear properties.

CONTINENTAL CARBON®. CONTINEX®

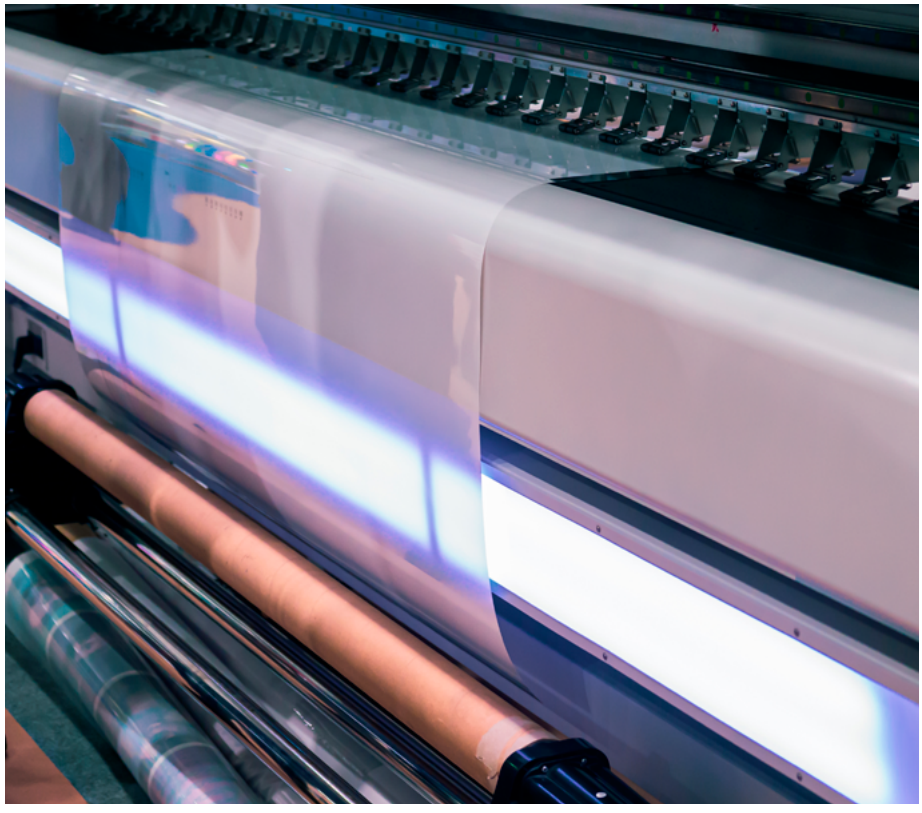
- **N220**. ISAF. Highly reinforcing.
- **N234**.
- **N326**.
- **N330**. HAF.
- **N339**.
- **N347**.
- **N351**.
- **N550**. FEF. Suitable for extrusion.
- **N660**. GPF. General purpose black.
- **N762**. SRF (Specialty Reinforcement Filler).
- **N774**.
- Thermal black **N990**. It is used in **Viton®** formulations due to its particle size and resistance to high temperatures.

VULCANIZATION ACTING AGENTS

They improve the performance of vulcanizers by increasing the density of the molecular network, thus improving mechanical properties, such as hardness and tensile strength.

FOR SULFUR OR PEROXIDE-BASED SYSTEMS

POLYVEST® EP 130S AND 110. Highly reactive plasticizers used as *binders* in recycled rubbers and to modify mechanical properties in virgin rubbers. They also reduce compression set by contributing their "cis" double bonds to the system. They also act as electrical insulators. They are also used in adhesives and sealants.



FOR PEROXIDE BASED-SYSTEMS

- **Dymalink® 633. y Dymalink® 634**. Both increase rubber-metal adhesion and provide higher cross-linking density.
- **SR350**. Vulcanizing acting agent for peroxide-based cure is ideal for silicone and EPDM. It enhances cross-linking density, resulting in increased system rigidity.

  Alternative in certain cases: **SR351.**
- **HVA-2**. Essential in formulations of chlorosulfonated rubbers such as the extinct **Hypalon®**, now replaced by CSM, also in neoprene and ethylene-based rubbers such as EPDM, EPM or EVA. Acting agent for peroxide-based curing systems and curing agent for other elastomers such as Vamac® or ACM. In addition, it improves electrical properties and prevents pre-vulcanization.
- **SR533 TAIC**. Sartomer®.
- **SR534**. Anti-reversal agent. *Sartomer®*.
- **SR708**. Metallic dimethacrylate. Improves abrasion resistance, adhesion, elongation, modulus, tear and break resistance, increases hardness. *Sartomer®*

RELEASE AGENTS

Using release agents helps prevent pieces from sticking to the mold, facilitating easier removal and reducing losses caused by breakage.

TRASYS®

Semi-permanent release agents that can be fluoropolymer or polydimethylsiloxane based.

SILICONE RELEASE AGENTS.

- High content silicone release emulsion.
- Silicone release emulsion 370.
- **Cilrelease® 393**. Release agent for emulsified wax-based phenolic resins.

DRYFILM®.

Fluoropolymer-based lubrication products that offer excellent alternatives to greases and oils where the priority is to provide long-term friction reduction and cosmetic appearance. They can be water-based or isopropanol-based.

ZONYL®.

Fluorinated polymer-based powder is a versatile internal lubricant designed for use in the plastics, elastomer, ink, and coatings industries. Leveraging the properties of PTFE, it offers an exceptionally low coefficient of friction, making it ideal for demanding applications. This compound not only reduces wear and tear but also imparts hydrophobic characteristics. When used in lubricants, it can increase the operating temperature and provide enhanced stability.

BLOWING AGENTS

Substances capable of producing a cellular structure through certain processes that promote their decomposition in different matrices such as polymers and a variety of plastics.

Generally, their activation temperature decreases in the presence of zinc oxide.

- **Azodicarbonamide (AZO).**
- **Microceler® G.**

RUBBERS

Correct rubber selection is essential to meet the performance requirements of the final part. We have a specific rubber for each need in a wide range of temperatures and characteristics, both solid and in emulsion.

ACRYLATES

- **Vamac®**. Ethylene methyl acrylate terpolymer. Works at 175 ºC. Resists oils, ozone, and low temperatures. Ideal for seals and turbo hoses in the automotive industry.
  - G.
  - GLS.
  - HVG.
  - Ultra HT 3020.
  - Ultra IP.

BUTADIENE / BUTYL:

- **Budene®**. Excellent rebound capacity and abrasion resistance. When included in formulations, it increases resistance to crystallization at low temperatures, so the bounce and resilience are maintained for longer.
- **Bromobutyl**. Low air and gas permeability. Faster vulcanization than chlorobutyl and excellent adhesion capacity to metals. Dampens vibration and has low permeability to air, gases, and moisture.

CHLOROPRENE

- **Denka® Performance Elastomers**. USA. Louisiana plant. Previously DuPont®.

NEOPRENE

- **Industrial grades:** They work at temperatures of 100 ºC. They resist oils, greases, solvents, acids. It is **self-extinguishing.**
  - **W, WHV, GNA, GRT.**
- **Denka adhesive grades:**
  - **WHV- A** (NPR 2008); **WHV; WRT**.
- **Liquid dispersion** of **neoprene: 571 A, 671 A, 842 A**. For pressure sensitive, water-based adhesives, *binders*, and coatings.
- Asian adhesive grades equivalent to types **AD 20, AD 40, AD 50**.

PDM ETHYLENE-PROPYLENE

NORDEL® IP DOW CHEMICAL.

- **3745** and **245** in pellets (for modification of lubricating oils); modification of thermoplastics, insulation.
- **3722**, pellets. Plastic modification and cable extrusion.
- **4520**, bale. Molded seals, diaphragms, joints.
- **4570**, pellets. Automotive hose, profiles.
- **4640**, bale. Molded parts, strap.
- **4725**, pellets. Rollers, high hardness compounds, joints. 4760, pellet. Extrusion of hoses and profile.
- **4770**, pellets. Hoses, profiles, low voltage cables.
- **4785**, pellets. Higher viscosity and load acceptance than 4770.
- **Nordel™ IP 5565**. Pellets. It is the improved amorphous grade. To this day, it is one of the most used for profiles and extrusions, even sponges.

OIL-EXTENDED

- **Nordel™ IP 6555**. Oil-extended to 23 phr. Ideal for profiles and all types of extruded products, both solid and foamed, that require rapid vulcanization.

EPICHLOROHYDRIN

- **Hydrin® C 2200 L and T 3000 L**. High resistance to oils, fuels, and solvents.

NATURAL RUBBERS

Latex with 60% solids content and high ammonium is available. For healthier production processes, a nitrosamine-free version is offered.

- Thailand: Superior physical and mechanical properties.
- Guatemala: Excellent cleaning capability and elongation.

RUBBER IN BALES

They provide rebound, high mechanical resistance to tearing and tension. Great resistance to abrasion.

- **3L natural** rubber, **Vietnam**.
- **5L** Campollo® plantations. **Guatemala**.
- **SVR 10**. Vietnam.
- **SGR 10** Guatemala.
- **SVR 20**. Vietnam.
- **Thick Pale Crepé 1X**, Sri Lanka.
- **RSS1**, Indonesia. Provides high abrasion resistance.
- **CV60**. Controlled viscosity.
- **HM 20**. Mexico.
- Crepe 2 natural rubber, from the country.

NITRILE RUBBER (NBR)

- Nitrile rubber-PVC **KRYNAC® 7348 VP**. 70 parts nitrile and 30 parts PVC. Comes in sheets. Highly resistant to ozone and abrasion. High viscosity for automotive hoses and seals. Knowledgeable printers request it for their rollers. Hose covers, shoe soles, cable jackets.
- **Nipol® 1041 L**. 40 ACN and 50 to 60 viscosity. Very processable. High resistance to oils.
- **Nipol® 1042**. 33% acrylonitrile and 78 viscosity. For applications requiring improved physical properties.
- **Nipol® 1052 J**. 33% acrylonitrile and viscosity.
- **Mooney 41 to 51. 32 to 34 ACN**. High properties and solvent resistance. Industrial and automotive molded parts, footwear. FDA 175.105 and FDA 177.26
- **Nipol® DN 3335**. 33 ACN and 35 viscosity. Very easy to process due to low viscosity. Better results in peroxide-based curing systems. Contains non-staining antioxidant. Especially recommended for **seals, hoses, o-rings** and automotive accessories. It cures quickly and looks great on light-colored pieces. Meets various FDA standards. Used in rollers, footwear and for blends with thermoplastics.
- Nitrile **rubber Nipol® 1082 V.** Acrylonitrile content 34 and 37 viscosity approximately. Antioxidant is added during its production.
- **Nipol® NX 775**. Zeon® Japan. Carboxylated nitrile rubber. High abrasion resistance and high resistance to fuels and hydrocarbon substances.
- **Nitrile rubber LG™ NBR 6250**.33 ACN and 50 viscosity. The most versatile.
- **Baymod® N XL 33.61.** Nitrile rubber powder. Copolymer of butadiene and acrylonitrile with medium oil resistance, specially developed for the modification of soft and semi-rigid PVC compounds and articles.

CHLOROSULFONATED POLYETHYLENE

- **CSM 40**. It resists temperatures of 150 ºC, greases, acids, abrasion. It is self-extinguishing.

POLYURETHANE RUBBER

- **Millathane® 5004**. Millable polyurethane. Hardness from 55 to 90. Very high abrasion resistance, excellent resistance to non-polar solvents and oils.
- **Millathane® E34. Curable by sulfur**. Excellent dynamic properties.
- **Millathane® 76**. Also **curable by sulfur** and is excellent at dampening vibrations.
- **Millathane® 97**. Millable polyurethane. Hardness from 45 to 95. Very high abrasion resistance, great transparency for footwear.

TPU

- **TPU Bangtai® 76E75**. Polyether base. Hardness 75. Hoses, marine recreational equipment, etc.

- **TPU Bangtai® 76E85**. Polyether base. Hardness 85. Hoses, hydrocarbon ducts, fire hose protectors. Excellent resistance to hydrolysis.
- **TPU Bangtai® 76E95**. Polyether base. Hardness 95. Hoses, oil containers. Excellent resistance to hydrolysis.

STYRENE-BUTADIENE RUBBERS (SBR)

They replace natural rubber. They also resist abrasion and tearing.

- First-class **SBR Black Masterbatch** (to pigment without dirtying the plant).
- **SBR 1012 Crumb** rubber. For adhesives.
- **SBR 1502** rubber (BUNA 1502 H)
- **SBR 1712** rubber: now 1793. The new nomenclature is due to the fact that it is now produced with a more environmentally friendly oil.
- **SBR Conchitas®** rubber.
- **High styrene SBR.** Asia. Better than the one made in the USA. It is more efficient than other brands to increase hardness.

FLUOROELASTOMERS

- **Viton®**: The highest performance in fuel resistance.
- **FKM®**. Economic line.

HIGH CONSISTENCY RUBBER SILICONE BASES

- Translucent silicone
- Sumisil® 20
- Sumisil® 30
- Sumisil® 40
- Sumisil® 60
- Sumisil® 70
- Sumisil® 80

High resistance to tension, elongation and tearing. In addition, we have grades that are highly efficient for extrusion.

PROPERTY MODIFIERS IN SILICONE

- For high temperature.
- Tension improver.

TOR RUBBER

VESTENAMER® 8012

Rubber that enhances compatibility and plasticity, boosts **green strength**, improves surface finish, and acts as a recovery agent for plant-generated **scrap**—especially in natural rubber, SBR, EPDM, and nitriles. This rubber meets the increased demands of modern tires, which must withstand higher speeds, friction, and temperatures. It doesn't just mix natural rubber with SBR; it homogenizes them, reducing the need for additional additives.

Ideal for asphalt modification.

PIGMENTS

Colors are the visual appeal of any finished piece or product. With our pigments you can give your pieces the desired finish and improve their presentation. 100 colors and more.

MINERAL PIGMENTS

- Titanium dioxide. **TiPure®** Chemours®.
- R-103, R-104, R-706, R-900, R-902.
- **Chromium oxides** (yellow, green).
- **Iron oxides** (yellow, black, red).
- Molybdates (orange).

CARBON BLACK PIGMENTS

TEKNOPIGMENTEX® LINE

- **Special black** pigments.
  - **PowCarbon® 5327 F**. (P60). Carbon black pigment. Its characteristics make it easily dispersible in rubbers, plastics, resins, paints, coatings.
  - **PowCarbon® 2429 G**. (PU). Carbon black pigment. Recommended for **industrial coatings**, **powder paints**, all types of **leather**, etc. By having greater tinting power than industrial grades, the amount used in coating applications can be reduced.
- **Ultramarine Blue Pigment**. FDA inorganic pigment.

ORGANIC PIGMENTS, REGULAR TEMPERATURES

HEUBACH® LINE FOR PLASTIC AND RUBBER.

- Permanent Yellow Pigment.
- Solid Yellow Pigment.
- PV Yellow Pigment.
- GNX PV7, CI 7 74260 Green Pigment.
- Blue 15:3.
- E5B Solid Red Pigment.
- Graphtol P2B CI 48:2 Red Pigment.
- Watchung 280 BRT430 D MX (48:2) CI 15865:2 Red Pigment.
- L5B 01 CI 57:1 Permanent Ruby Pigment.
- They comply with international standards and regulations.
- Very wide catalog of colors and shades.

INORGANIC PIGMENT IN GENERAL

Color stability at high temperatures.

- Fluorescent yellow and green pigments.

PIGMENTS FOR SILICONE

- Black master pigment.
- Blue master pigment.
- Red master pigment.

COATINGS

TEFLON™

Due to the enormous versatility of perfluorinated polymers, Teflon® coatings are used in a wide range of industrial and food applications (in certain cases, our Teflon® is FDA grade). Teflon® coatings provide the following benefits:

- Non-stick.
- Low coefficient of friction.
- Temperature resistance of up to 200 °C continuously.
- High resistance to chemical substances.
- Excellent abrasion resistance.

We have a wide variety of grades for your specific needs.

RESINS

They act as adhesion promoters between the layers of rubber, facilitating the raw assembly of rollers or coatings. Most are migratory and give a shiny surface finish. We also have base resins for the manufacture of hot melt adhesives or application by pressure.

NATURAL TAR

- **Rosin gum**, pine tar or rosin is obtained from the pine tree and is essential for base formulations of adhesives, printing inks, rubber, and other applications.
- **Pine tar**.
- **Modified pine tar**.
- **Tar soap**.
- **Rosin**, also known as colophony, is a glass-like solid that crystallizes. It mainly contains abietic acid and when combined with bases, it forms salts called rosinates or pinates, commonly referred to as rosin soaps. One familiar example is tar soap. While rosin soaps are quite compatible with solvents like benzene and toluene, they can also be used to enhance the stickiness and/or thickness of water-based systems due to their partial compatibility.

PHENOLIC RESINS FOR ADHESION

- **Phenolic Resins SL-1801**. It is of the octyl-phenol-formaldehyde based thermoplastic type.
- **Coumarone resin**.

HYDROCARBON RESIN

- **Hydrocarbon resins C5/C9**. generic for rubber and adhesives.
- Hydrocarbon resins **Quintone K 100 Zeon™ (C5)**

STYRENE-MALEIC RESINS

POLYSCOPE®, NETHERLANDS.

- **XIBOND®** and **XIRAN®** lines
  - SMA copolymers
  - SMANPMI terpolymers
  - SMA composites

Styrene-maleic anhydride copolymers have the advantage of having a hydrophilic segment and a hydrophobic one. This allows them to establish interactions of very different nature between various substrates, which gives them great versatility of application.

XIBOND®

Blend optimizers in engineering plastics:

- Compatibilizers.
- Chain extenders.
- Surface modifyers.

Found mainly as pellets.

XIRAN™

Specialty polymers. Can be found in solid form or in aqueous solution.

Applications:

- Water-based solutions.
- Powdered paint.
- Paper.
- Inks and coverings.
- Construction.
- Electronics.
- Adhesives.

POLYAMIDE RESINS

- **Vestamelt® 250 P2** . It is a copolyamide used as a **hot melt adhesive** or **modifier** in **paints** and **coatings**.
- **Vestosint®**. Polyamide 12 resins with controlled particle size, ideal for **polyamide coatings on metal**.
- **Vestamid®**. Wide range of polyamides for a wide variety of industries and applications.
  - **Vestamid®** L1670 natural.
  - **Vestamid®** L1940.

RETARDANTS

In ultra-accelerated systems they are used to increase the "*scorch* time". In the case of multi-cavity molds, they provide the necessary time for filling with raw rubber, allowing time for the fluid to fill the mold.

- **Benzoic acid.** Also functions as a nucleating agent in thermoplastic polyethylene and polypropylene systems that do not contain basic compounds.
- Phthalic anhydride. **Microtard® A**.
- **PVI** retardant. Vulcanization retardant that protects rubber from degradation by heat and oxidation.
- **Rhenogran®** predispersed retardants.

SOLVENTS

Basic for cleaning and dissolving ingredients.

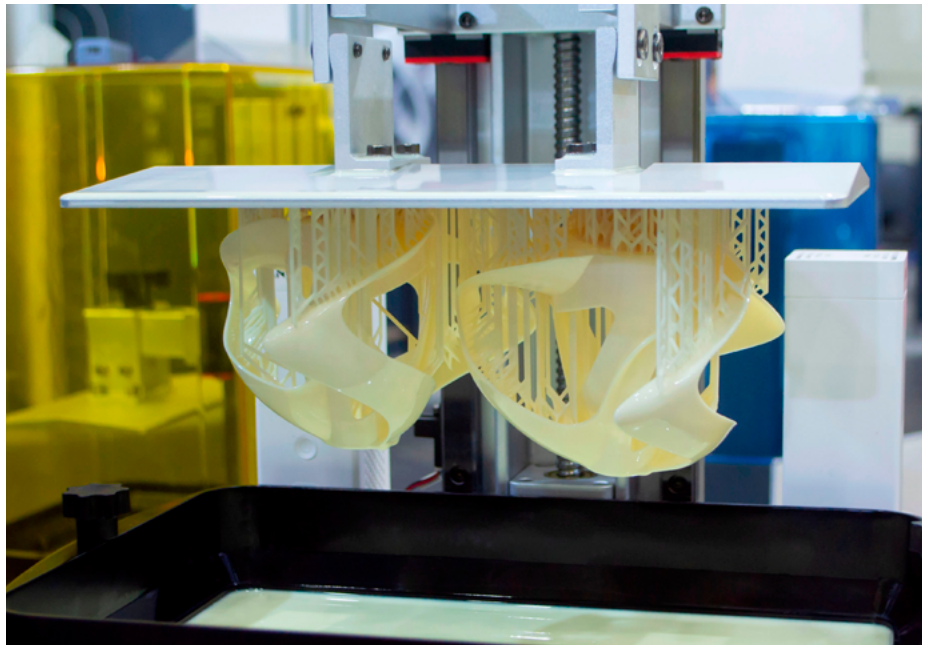
- **Perchloroethylene**.
- **Toluene**.
- **Xylotol** (60% xylene/40% toluene). Evaporates at a slower rate than toluene

UV TECHNOLOGY

SARTOMER®

The world's largest specialty line of UV-LED-EB curable acrylates and methacrylates monomers and oligomers for a wide range of markets: specialty coatings, printing inks, composites, floor coatings, electronics, adhesives, and many other high-finish applications. With the widest range of specialty in:

- **Monomers (SR**). Acrylates (mono, di, tri, tetra and pentafunctional) low migration, methacrylates, adhesion promoters: TMPTA, TPGDA, HDDA, TMPEOTA, DPGDA, PETA and specialties.
- **Oligomers (CN)**. Acrylate urethanes, acrylate polyesters, acrylate epoxies and acrylate modified amines, methacrylates (CN).
- **Photoinitiators ®**. Photoinitiators comprise the **SpeedCure®** product range comprising substances that promote curing by means of free radicals or cationic systems through interaction with UV or LED light.
- They have applications in a wide range of curing technologies, from protective coatings, adhesives, and printing inks, to the automotive, electronics and food packaging industries.



PLASTICS LINE

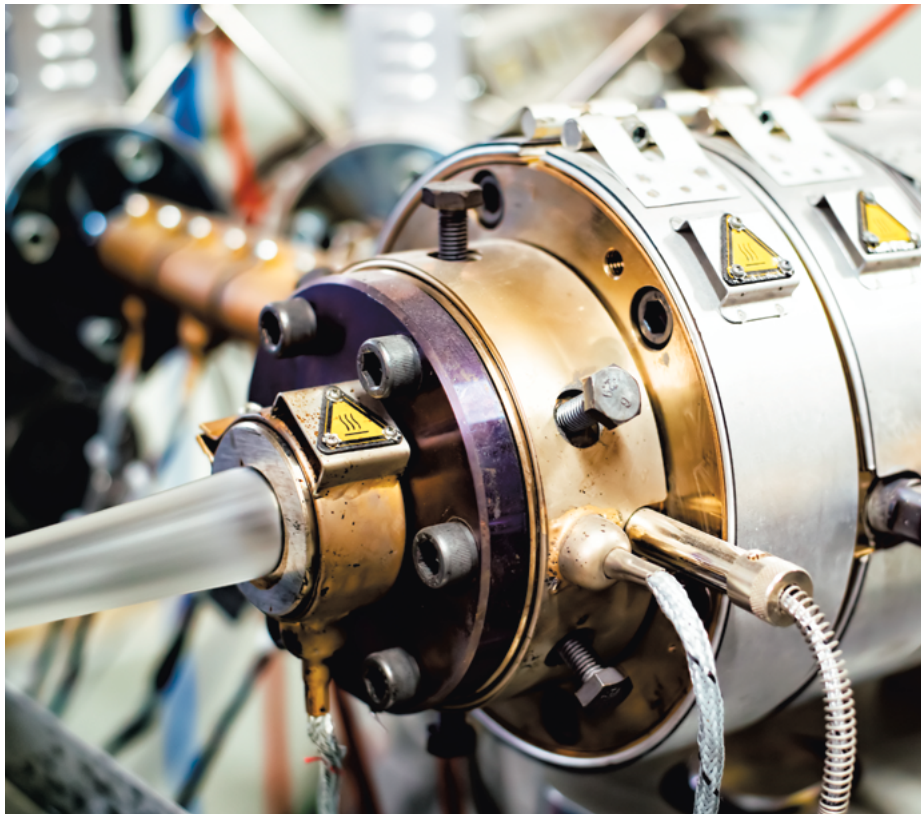
- **B530 bio-organic oil**. Biodegradable plasticizer for flexible **PVC**.
- Epoxidized soybean oil for manufacturing chlorinated polymer objects, nitrocellulose, neoprene, and PVC.
- **Viton® Free Flow®** (for plastic). Fluoropolymer. Slip agent for polypropylene and polyethylene masterbatches.
- **Chlorinated polyethylene**:
  - **Wellpren® and Cloriprene®**. Polymers with flame retardant properties and medium resistance to oils and fuels. They also have good adhesion properties.
- **Tefzel®**. Melt-processable ethylene/tetrafluoroethylene copolymers, which can be used for electrical insulation, wires, and cables, as well as valve coatings.

IMPACT MODIFIERS

POLYOLEFIN ELASTOMER RESINS

- **Lucene®**, from Lg®.
- **Engage®, POE** from Dow.
- Impact modifier. **Soft touch parts**. Modifies plastic, polyethylene, polypropylene and EVA, both virgin and recycled.
- **Vestoplast®**. Amorphous alpha-polyolefin resins, ideal for both impact modification and **hot melt adhesive formulation**.
- **Septon®**. Thermoplastic elastomers for injection molding, for adhesives and for modification of conventional thermoplastics. Can be combined with neoprene in organic solvents to achieve better adhesion.

For more information, visit
www.suministro.com.mx



suministro de especialidades

a Formerra company

Formerra is a preeminent distributor of engineered materials, connecting the world's leading polymer producers with thousands of OEMs and brand owners across healthcare, consumer, industrial, and mobility markets. Powered by technical and commercial expertise, it brings a distinctive combination of portfolio depth, supply chain strength, industry knowledge, service, leading e-commerce capabilities, and ingenuity.

Formerra and Suministro de Especialidades combined capabilities include:

- **Nationwide Geographic Coverage**: resources in and surrounding Guadalajara, Juárez, Mexico City, Monterrey, Saltillo, San Luis Potosí, and Tijuana.
- **Extensive Technical Sales Support**: over 30 technical sales experts available throughout Mexico with access to additional resources in the United States.
- **Comprehensive Engineered Materials Portfolio**: broad offering including an extensive combination of highly engineered polymers, elastomers, additives, and adhesives from an array of world class suppliers.
- **Value Added Services**: in-country formulation expertise, lab-based material testing, world-class supply chain reliability, and small batch / breakbulk capabilities – available from ISO 9001-certified facilities.

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