



new materials **NEWS**

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**MATERIALS
SERVICE**

Schenectady, New York

FOR GENERAL ELECTRIC EMPLOYEES ONLY

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METALS AND METAL PRODUCTS

"Hot Hardness" Stainless Steel

Lesco BG4 Vac Arc is a new grade of "hot hardness" stainless steel developed to meet compressive stresses up to 600,000 psi at temperatures above 800 F. It was designed especially for aircraft engine bearing assemblies, but is useful for many other applications.
(Latrobe Steel Co., Latrobe, Pa.)

New Titanium Alloy

A new titanium alloy, 8Al-1Mo-IV, can be forged at temperatures to 1950 F, about 200° above that of the older alloy 6Al-4V, giving better die-filling properties and thus more accurate forgings. The parts also have better creep resistance. The alloy comes in rolled bars and forged billets; sheets will be available later. The tensile strength is 130,000 psi, yield strength 120,000 psi, and elongation 10%.
(Titanium Metals Corp. of America, 233 Broadway, New York 7, New York)

Zinc Oxide of Increased Purity

A zinc oxide of 99.6% purity, containing no manganese and not more than 0.0003% copper (metals undesirable in foam rubber manufacture), is now available, particularly recommended for rubber, ceramic, textile, and chemical applications. The powder has nodular particles and a high degree of whiteness.

(Sipi Metals Corp., 1720 Elston Ave., Chicago 22, Illinois)

Improved Stainless Steel Sheet

Stainless steel sheet is now available that is extremely flat and does not vary in thickness more than 0.005" across the width of a sheet of 27". Conventional rolled sheet has a thicker "crown" in the center. The new sheet is ground flat by a newly-developed belt-grinding process. The sheet is particularly designed for aircraft and missile skins.

(The Wallingford Steel Co., Wallingford, Conn.)

(Process developed by Behr-Manning Co., Troy, New York)

CHEMICALS

Cross-Linking Agent for Linear Polyethylene

A new cross-linking agent for linear polyethylene is being offered as Luperco 130-XL. It reacts in the presence of acidic as well as basic and neutral carbon blacks, and has high thermal stability. The active material is designated chemically as 2,5 di(t-butylperoxy) hexyne-3, and is marketed as a 50% concentration on an inert filler.

(Wallace & Tiernan, Inc., Buffalo 5, New York)

New Group of Paint Additives

Syl-ad is the name of a new group of paint additives designed to give better control over the surface characteristics of air-dry and baked finishes, particularly the synthetic resin paints and enamels. The material is a silicone in various grades, effective in small amounts from 0.05% to 1%. It is used to impart textural and hammer finishes to enamels.

(The Dow Chemical Co., Midland, Mich.)

Gallium Arsenide for Semiconductor Uses

Gallium arsenide for semiconductor uses is now available commercially in five grades rated on the basis of electrical resistivity and carrier concentration. The material will operate in rectifiers up to a temperature of about 600 F. Its melting point is about 1235 C.

(Ohio Semiconductors, Inc., 1205 Chesapeake Ave., Columbus 12, Ohio)

Synthetic Hydrous Calcium Silicate

A new grade of synthetic hydrous calcium silicate, marketed as Micro-Cel T-38, can be used as a paint pigment extender to replace a part of the titanium oxide without loss of opacity and with only slight change in the tint. It can also be used as a flattening agent. The powder has a medium particle size.

(Johns-Manville Corp., Celite Div., 22 E. 40th St., New York 16, N. Y.)

PLASTICS

Plastic with High Heat and Chemical Resistance

A new type of plastic of exceptionally high heat and chemical resistance, designated as Kynar, is a polymer of vinylidene fluoride ($\text{CH}_2\text{:CF}_2$), with a high molecular weight, about 500,000. It comes as a white free-flowing powder, as a dispersion, or in pellets, and it extrudes or molds easily. The cured material is a hard white thermoplastic resin with a slippery surface similar to that of the tetrafluorocarbon resins. It is being recommended

for seals, gaskets, pump impellers, wire insulation, gears, tank coatings, and electrical parts.

(Pennsalt Chemicals Corp., Philadelphia 2, Pa.)

"Ceramoplastic" Insulating Material

An improved grade of "ceramoplastic" insulating material that can be precision molded into complex shapes for electronic applications is Supramica 620BB. It is made with a selected grade of synthetic mica flakes, glass-bonded. As the coefficient of expansion is about the same as most common metals, it gives a tight seal and avoids cracking with metal inserts.

(Mycalex Corp. of America, 125 Clifton Blvd., Clifton, N. J.)

Potting Material for Electronic Components

A new potting material for encasing electronic components, LTV 602, cures to a transparent flexible solid that protects from vibration shock as well as from moisture and atmospheric and chemical attack. The transparency permits parts to be seen and any section repaired or removed by cutting into the encasement and then refilling.

(General Electric Company, Waterford, New York)

Urethane Foam Resin

A new urethane foam resin for foamed-in-place applications, designated as Expandoform, is stated to have a high thermal efficiency that will permit greatly reduced thickness of walls in refrigerating equipment. The material is an improved grade of polyether-type urethane which expands to a density of 2 lb. per cu. ft. into a stable, rigid foam of good strength. It is odorless, and is resistant to fungus attack and to solvents.

(Armstrong Cork Co., Lancaster, Pa.)

"Cold Solder" for Repairing Metal Parts

Devcon F is a new "cold solder" for repairing cracks or imperfections in metal parts. It is composed of about 80% aluminum powder and 20% epoxy resin. It comes in tubes to be squeezed out for application together with a hardening agent; and, when cured at 150 F it adheres strongly to iron, steel, bronze, aluminum, and to ceramics.

(Devcon Corp., Danvers, Mass.)

FABRIC AND PAPER PRODUCTS

Short-Staple Rayon Fiber

A new short-staple rayon fiber, which can be made into paper and non-woven fabrics on standard equipment without the addition of any bonding agent other

than the water to form the slurry, is Multicell rayon RD-101. The fibers differ from ordinary fibers in being multicellular, so that they lock themselves firmly in place with contacting fibers to make soft, opaque sheets. The paper is suitable for backing, liners, and filters.
(American Viscose Corp., Marcus Hook, Pa.)

Teflon Monofilament Fiber

Teflon monofilament fiber is now available in sizes 250 and 1200 denier, suitable for weaving into filter fabrics that can replace high-alloy wire fabrics for filtering corrosive liquids, and gases where the temperatures are not excessive. When heat-treated, there is no edge raveling as with multifilament yarns. The monofilament is also suitable as bristles for brushes to resist the action of acids and corrosive solvents.
(E. I. du Pont de Nemours & Co., Inc., Wilmington 98, Del.)

LABORATORY MATERIALS

New Type of Polyester Film

A new type of polyester film, now available in pilot-plant quantities under the name of Terefilm, has exceptionally high electrical insulating properties, good chemical resistance, and high strength up to its heat-distortion temperature of 340 F. The film is transparent. It is offered for insulating capacitors, coils, cable, and electrical parts; for magnetic tape, for laminating, and for packaging.

(Acme Backing Corp., Canal & Ludlow Sts., Stamford, Conn.)
(The polyester resin is from Eastman Chemical Products, Inc.)

MISCELLANEOUS

Ceramic Insulating Brick

A new ceramic insulating brick for high-temperature uses, called IBC 4200 brick, will withstand temperatures up to 4200 F in oxidizing atmospheres, and up to 3000 F in reducing atmospheres with carbon present. It has a porous structure with uniformly interconnected cellular pores that permit gases and some liquids to pass through. It is light in weight.
(Ipsen Industries, Inc., Rockford, Ill.)

Flexible Magnet Material

A new flexible magnet material, Plastiform 1, is a barium ferrite bonded with rubber. The sheets can be cut or punched with ordinary tools, and

are useful for the production of magnets in strips, sheets, or rings.
(Leyman Corp., 5178 Crookshank Rd., Cincinnati Ohio)

Flexible Magnet Material in Tape Form

Another flexible magnetic material, called Magnyl, comes in tape form in thicknesses from 1/16" to 1/4", in widths from 5/16" to 2", and is strongly magnetic on one side and non-magnetic on the other side. It is made of a vinyl resin containing fine magnetic particles. Typical uses are for seals for freezer doors and sales display devices.
(Applied Magnetic Corp., 194 River Rd., Leeds, Mass.)

Non-Bleeding Red-Violet Pigment

A new non-bleeding red-violet pigment, Quindo Magenta RV-6803, is a quinacridone, and has good color retention for inks, plastics, and for automobile and other product finishes. It has a brilliant magenta hue, giving red shades with molybdate orange, pastel shades with titanium dioxide, and iridescent magenta shades with non-leafing aluminum powder.
(Allied Chemical Corp., National Aniline Div., 40 Rector St., NY 6, NY)

Easily Soluble Formulated Dextrins

Koldrex dextrin is a new series of formulated dextrins which dissolve easily in cold water to produce stable liquid adhesives of uniform viscosity. The materials are produced by combining dextrin with borax, preservatives, and defoamers to make liquid adhesives of given characteristics, and then spray-drying into powder. For use, it is only necessary to add water.
(A. E. Staley Mfg. Co., Decatur, Ill.)

New Refractory Brick

A new refractory brick for open-hearth and electric furnace roofs, called Korundal XD, will withstand a 25-psi load at a temperature of 3000 F for long periods without spalling or dimensional change. It is a corundum bonded with mullite.
(Harbison-Walker Refractories Co., Pittsburgh 22, Pa.)

COMMENTS

The claims in this report are those of the manufacturer and, although screened before printing by technical personnel in various interested departments, they have not necessarily been verified. Those interested will communicate directly with the manufacturer and make their own evaluations.

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