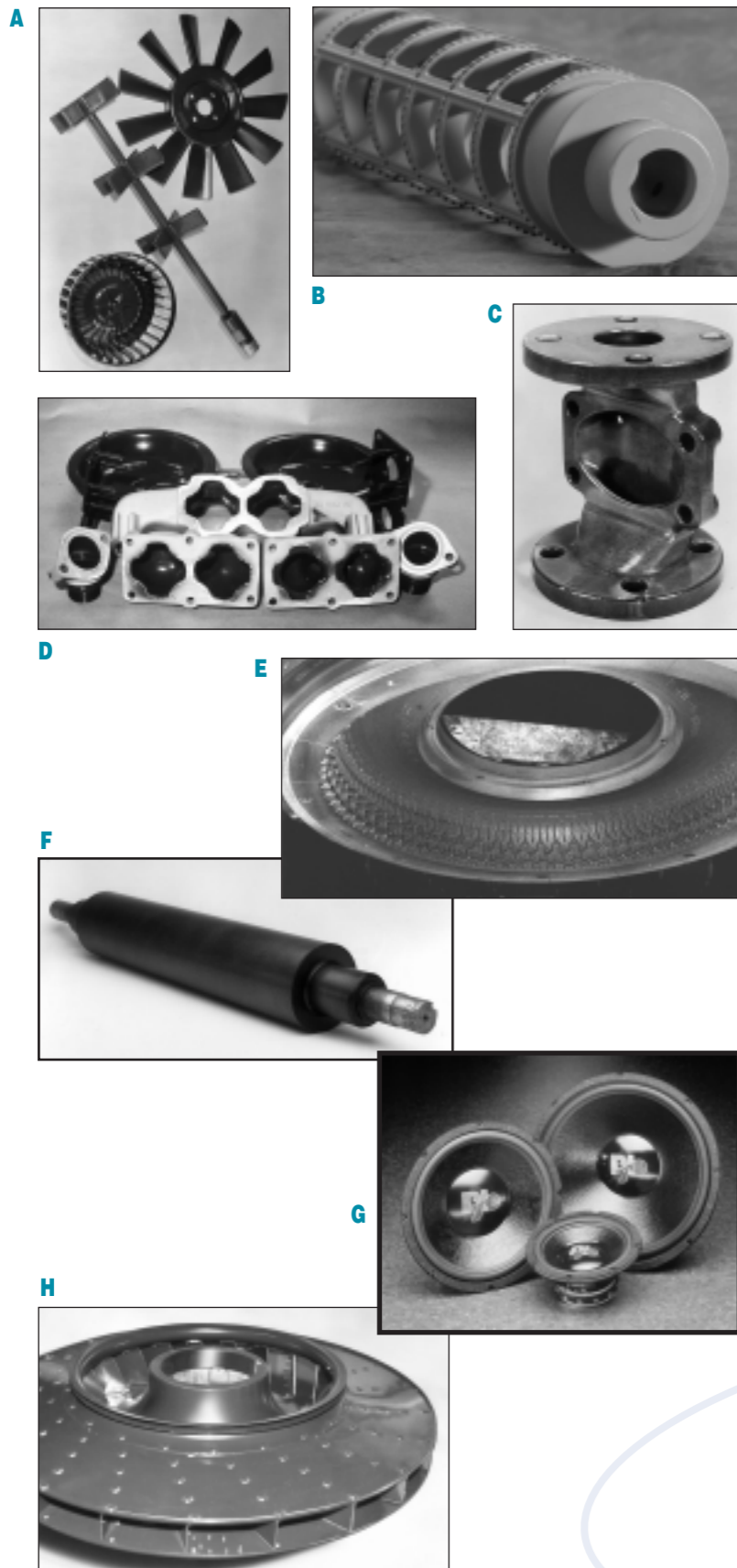
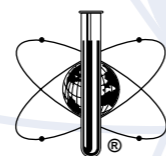


## More Examples of LECTROFLUOR® in Use



- A.** Blower and agitator components are protected against chemical attack.
- B.** A LECTROFLUOR non-stick coating on a ravioli roller prevents food sticking and allows cleaning without production slowdown.
- C.** Metal valves coated with LECTROFLUOR exhibit superior resistance to corrosion and abrasion even when exposed to corrosive slurries and harsh chemicals.
- D.** Pump parts used in chemical processing equipment are protected against costly deterioration by a chemical-resistant LECTROFLUOR coating.
- E.** Mold release and abrasion problems on a rubber tire mold are eliminated when the mold is coated with LECTROFLUOR.
- F.** FDA/USDA/NSF/AgriCanada-compliant LECTROFLUOR coating prevents food particles from sticking to dough-former rollers. Permits cleanup without caustics.
- G.** Non-stick LECTROFLUOR coating on arbors permits instant separation of the arbors from voice coils used in Pyle Industries' audio speakers, resulting in a 75% reduction in arbor rejects.
- H.** Impeller parts used in mining are protected against destructive effects of reagents and acids as well as against abrasive wear of slurries.



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# LECTROFLUOR®

## Copolymer Coatings Provide Superior Corrosion And Chemical Resistance, Plus Mold Release ...Even In Extremely Hostile Environments!

- ▶ Superior corrosion resistance
- ▶ Broad resistance to chemicals and acids
- ▶ Prevent abrasive wear and galling
- ▶ Self-lubricating for extended wear
- ▶ Provide superior mold release
- ▶ For parts made of all types of metals
- ▶ Permanent dry lubricity for very low COF
- ▶ FDA, USDA, NSF and AgriCanada code compliance
- ▶ Offer heat stability
- ▶ Provide radiation and U/V resistance
- ▶ Complete protection at temperatures from -360°F to +550°F (-182°C to +288°C)

The LECTROFLUOR series of high-technology, polymer-based, surface enhancement coatings provides superior resistance to metal parts and equipment subjected to corrosion, chemicals and abrasive wear (especially from slurries). Coatings in this series also exhibit excellent release characteristics, and many comply with codes for food and pharmaceutical contact.

The LECTROFLUOR series of coatings also improves the wear characteristics and performance of all types of metal. It especially provides superior resistance to severe corrosion and chemical attack in hostile environments. Some of the coatings exhibit excellent mold release properties. And many of them meet FDA, USDA, NSF

and AgriCanada codes — making them ideal for use in food, pharmaceutical and external medical applications. LECTROFLUOR coatings are based on proprietary blends of engineering polymers with a very low Coefficient of Friction. The metal parts are first cleaned and prepared in specially designed equipment. The selected polymers are then applied by either standard spray methods or by electrostatic spraying, depending on the polymers and the part's end use.

The selection of which polymers to use is based on many factors, including: end-use application of the part, its base metal, the kind of hostile environments to which it might be exposed, and the coating buildup permitted.

## Examples of How LECTROFLUOR Coatings Solve Performance Problems



Lightweight pneumatic cylinders by Parker Hannifin's Motion & Control Division were designed for use in harsh applications in the food and beverage industries. Aluminum was used as a replacement for heavier stainless steel in the body, heads, caps, and other components. Prototype units placed in a food plant, however, quickly exhibited severe corrosion due to caustic washdowns. A LECTROFLUOR coating applied to the aluminum parts eliminated any corrosion on their final full-production units.



The valve discs and stems used in an acid pump are treated with a LECTROFLUOR coating to resist corrosion and abrasion and to protect them against attack by chemicals and acids.

# LECTROFLUOR® Surface Enhancement Technologies

## LECTROFLUOR 601

For maximum corrosion resistance on ferrous and non-ferrous metals over a broad temperature range.

## LECTROFLUOR 602

Exhibits superior resistance to U/V and radiation as well as to chemicals. Meets FDA/NSF codes.

## LECTROFLUOR 604

Meets USDA/FDA/NSF codes. Offers chemical and corrosion resistance at temperatures to 500°F (260°C). Also exhibits superior mold release.

## LECTROFLUOR 611

Vegetable based coating that meets FDA/USDA/NSF and AgriCanada codes. Superior corrosion and fungus resistance.

## LECTROFLUOR 615

Meets USDA/FDA/NSF codes. Exhibits superior resistance to chemicals and wear at temperatures from -400°F to +550°F (-240°C to +288°C)

	LECTROFLUOR 601	LECTROFLUOR 602	LECTROFLUOR 604	LECTROFLUOR 611	LECTROFLUOR 615
<b>Special Benefits</b>	Excellent corrosion, chemical and abrasion resistance. High oxidative stability. Excellent mechanical toughness and cut-through resistance. Good electrical properties.	Superior chemical resistance. Also resists fungus, impact and U/V radiation. Low permeability to most gases and liquids. Excellent dielectric properties.	Very low coefficient of friction. Excellent impact and abrasion resistance. Superior glue and mold release (especially in rubber molding) permits easy cleanup.	Superior corrosion and impact resistance. Permits fast, easy cleanup of equipment parts. Resists staining. Selected colors available.	Superior mold release unaffected by U/V weathering. Superior cryogenic stability. Excellent heat and chemical resistance. Very low Coefficient of Friction.
<b>Applications</b>	Excellent for use with chemical processing equipment, scrubbers, air moving equipment, pumps, lined pipe valves and meter housings, as well as mixing vats.	Thick film recommended for all radiation-resistant applications. Good insulating material for electrical and electronic products, including probes, chassis, mounts, and housings. Ideal for use in medical products.	Recommended for use in food and drug processing and packaging applications (especially pasta making equipment), as well as in dryers, housings, stirrers, and chemical reaction linings. Dry lubricated surfaces solve sanitation problems.	Ideal for sanitation and maintenance in food and drug processing and packaging (especially candy making). Also used in the marine industry, on dishwasher tubs and baskets, on refrigerator shelving, industrial gas tanks, and home appliances.	Specially developed for food contact applications such as sealing dies, die rolls, stirrers, dryers, hoods, tanks and conveyor system components and rolls in the baking industry.
<b>Engineering Data</b>					
<b>Physical</b>					
Specific gravity	1.67 – 1.68	1.77	1.37 – 1.38	1.04	2.5
Thickness range	0.002" – 0.025"	0.002" – 0.030"	0.001" – 0.002"	0.002" – 0.025"	0.0015" – 0.004"
Flammability ratings	UL 94 V-O	UL 94 V-O	UL 94 V-O	UL 94 V-O	Will not support combustion
Oxidative stability	High	High	High	High	High
Salt spray resistance	Excellent	Excellent	Excellent	Excellent	Excellent
Acid resistance	Excellent	Excellent	Excellent	Excellent	Excellent
Colors available	Black	Black	Tan	Tan, brown, black, and white	Gray, black, and sparkling black
<b>Thermal</b>					
Curing temp. maximum	575°F (302°C)	525°F (274°C)	720°F (382°C)	600°F (316°C)	750°F (371°C)
Continuous usage temp.	275°F (135°C)	275°F (135°C)	446°F (230°C)	212°F (100°C)	500°F (260°C)
Short term usage temp.	350°F (177°C)	300°F (149°C)	500°F (260°C)	284°F (140°C)	550°F (288°C)
Thermal conductivity – BTU in/hr-ft <sup>2</sup> -°F	1.05	1.7	2.0	2.1	1.7
Specific heat capacity – BTU-lb/°F	0.28	0.32	0.26	0.60	0.28
<b>Friction / Release</b>					
Coefficient of friction – Static	0.4 – 0.6	0.18	0.17	0.3	0.15
Coefficient of friction – Dynamic	0.3 – 0.5	0.14	0.16	0.1	0.10
<b>Wear Resistance</b>					
Taber abrasion weight loss from revolving disc with a CS-17 for 1000 cycles (mg)	11.1	8	6.4	8.0	10.2
<b>Mechanical</b>					
Hardness – durometer (Shore)	D-80	D-80	D-85	D-75	D-80
Elongation %	170 – 200	100	100 – 200	150	300
<b>Electrical</b>					
Dielectric strength V/mil	2000 (.001" thick)	1280	900	1000 (white)	800
Dielectric constant (25°C-60Hz)	2.6	8 – 10	3.1	3.5	2.1

This coating is applied to 2MAE Series cylinders.