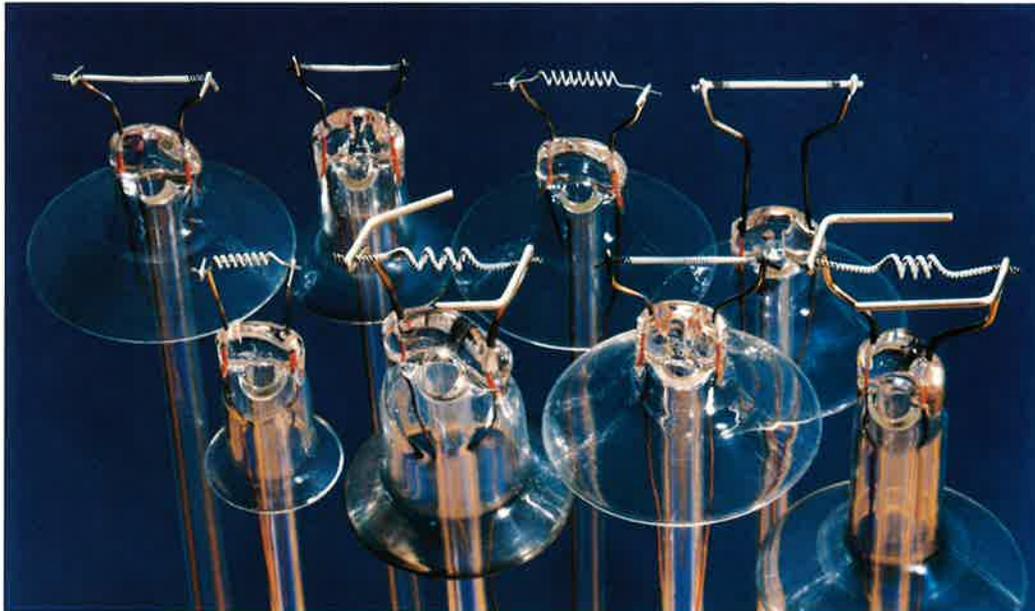




GE Lighting Components Marketing & Sales Operation



Emission mixes applied to fluorescent lamp filaments emit electrons that assist in the start-up and operation of the lamp.

Emission Mixes

Electronic emission mixes are key ingredients in the operation of fluorescent lamps, cathode ray tubes, glow lamps and other electronic devices. Applied to the cathode of the device and then suitably activated, they freely emit electrons which stimulate ignition and help maintain continued operation.

GE emission mixes are carefully controlled organic suspensions of a co-precipitated carbonate (typically Ba/Sr/Ca), with a zirconium source, either metal or oxide, in a nitrocellulose binder.

Properties Monitored

Because the quality of the emission coating determines to a great extent the life of the electronic device, properties such as viscosity, density and particle size are closely



monitored to insure that strict quality control is maintained during the manufacturing process.

GE emission mixes are formulated for application to fluorescent cathodes via a dipping process. The selected suspension solvent allows for some flow on and into the cathode before drying. The nitrocellulose binder has a dual advantage of being effective at low solids and easily removed during activation. The zirconium source is added to control the rate of volatilization of the barium during lamp operation.

Five Types

GE offers five types of emission mix suspensions.

- Type 114-1-67 is a low-sodium mix that is the primary suspension for all types of fluorescent lamps. It contains zirconium metal as its zirconium source.

Emission Mix Suspensions

Emission Mix Code	Carbonate mole ratio Ba/Sr/Ca	Zirconium Source	Suspension Solvent	Particle Size* (microns)	Suspension Density (g/cc)	Resource Number	Minimum Order Quantity**	Application
114-1-67	50/30/20	Zr Metal	propylene acetate	2.4-3.0	2.24-2.26	3461944	12 Bottles	Fluorescent Lamps
114-1-60	56/31/13	Zr Oxide	propylene acetate	3.0-4.2	2.22-2.26	2685107	4 Bottles	Fluorescent Lamps
114-1-62	56/31/13	Zr Oxide	propylene acetate	3.6-4.2	2.22-2.26	2684901	8 Bottles	Fluorescent Lamps
117-7-01	57/43/0	N/A	butyl acetate	0.8-1.0	1.08-1.12	1314749	19 Bottles	Glow Lamps
117-7-02	57/43/0	N/A	ethyl acetate	0.8-1.0	1.08-1.12	2684464	18 Bottles	Glow Lamps

*Particle size measured via Cilas Granulometer

**All emissions mixes are packaged in 16 ounce glass bottles

- Type 114-1-60, also a low sodium mix, is primarily used in T10 and T12 fluorescent lamps or where the use of zirconium metal is not desirable. The zirconium source in 114-1-60 is the oxide form.
- Type 114-1-62, also a low sodium mix that utilizes zirconium oxide, is recommended for slimline fluorescent lamp applications.
- Type 117-7-01, which is recommended for use in glow lamp applications, utilizes a butyl acetate solvent.
- Type 117-7-02, also a glow lamp mix, contains an ethyl acetate solvent.

Technical Assistance

As one of the world's leading makers of lamps, GE has developed its own expertise in the formulation and application of emission materials.

We welcome the opportunity to assist users in selecting the emission mix best suited for their application.

Availability

Emission mixes are packaged in 16 ounce glass jars. Products are generally available in two to three weeks. Orders are subject to minimum order quantities.

Toxicity

The toxicological properties of electron emission materials have not been completely defined. GE, therefore, suggests they be handled in such a manner as to avoid dust inhalation, ingestion and skin or eye contact. Some components of these materials are flammable liquids and necessary precautions should be taken.

Part or all of these materials may also have been reported for inventory under the Toxic Substance Control Act (PL-94-469).

Ordering Information

Detailed information about electronic and lamp emission mixes are available from the Marketing and Sales Operation.

Send orders directly to the Customer Service Department at the Chemical Products plant. These orders should include pertinent engineering details and packaging instructions.

Total Capability

GE Lighting Components Marketing & Sales Operation is the source for a variety of parts and materials, including tungsten and molybdenum wire, glass bulb blanks, tubing and pressed ware; Lucalox[®] ceramic, lamp chemicals, Dumet & Cumet wire, lead wires, lamp bases and other components used by the lamp industry.

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