



# SOLDERING AND BRAZING FLUXES

GENERAL ELECTRIC COMPANY  
LAMP COMPONENTS DIVISION

PRODUCT DATA SHEET 7760-B

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General Electric offers a complete line of soldering fluxes designed for specific soldering and brazing applications. Our fluxes are manufactured to exacting specifications to help ensure quality joins.

General Electric soldering fluxes consist of four general groups or classifications:

- (1) The **acid** type: Typically a solution of one or more inorganic salts.
- (2) The **organic** type: Typically, mild organic acids and bases, and certain of their derivatives, notably their hydrochlorides.
- (3) The **rosin** type: Typically a solution of rosin and organic solvent.
- (4) **Special**: Fluxes designed for brazing and/or special applications such as aluminum metal and where a non-conducting flux is required.

## ACID FLUXES

General Electric acid fluxes are based on solutions of zinc chloride and/or ammonium chloride. These fluxes are our most active fluxes and are effective on common metals except aluminum and magnesium. It is recommended the soldered unit be treated with hot water or steam, which will dissolve or wash away any residue present to prevent corrosion. These soldering fluxes are applicable for automatic soldering systems.

Product Designation	Order No	Product Characteristics
Soldering Flux 115-5-6	44002	Zinc ammonium chloride flux; 28% active salt; ethylene glycol base. Recommended for general soldering on copper, nickel and iron.
Soldering Flux 115-5-11	44009	Similar to soldering flux 115-5-6, except the active salt content is 20%.
Soldering Flux 115-5-30	44010	Zinc ammonium chloride flux; 10% active salt; glycerine base. Recommended for eyelet and lead-wire soldering.
Soldering Flux 115-5-52	44007	Zinc ammonium chloride flux; 60% active salt. Recommended for tinning steel, copper or brass parts.
Soldering Flux 115-5-64	44011	Zinc ammonium chloride paste flux; grease base. Recommended for soldering pins on fluorescent lamps and in other applications where it is desirable to minimize the spreading of the flux.

## ORGANIC FLUXES

General Electric organic fluxes are based on the hydrochlorides of mild organic bases and acids. Being organic, they are subject to rapid decomposition at the heat of soldering with subsequent conversion to volatile derivatives or else to an inert residue. General Electric organic fluxes are quite active and efficient, especially in areas requiring fast soldering and where minimal amounts of corrosion may be tolerated. Organic base soldering fluxes are applicable for automated soldering systems.

<b>Product Designation</b>	<b>Order No.</b>	<b>Product Characteristics</b>
Soldering Flux 115-5-56	44023	Urea flux; 10% active alcohol base. Mild activity, recommended for use on copper, brass, silver, nickel, cadmium and zinc metals.
Soldering Flux 115-5-59	44015	Lactic acid flux; 10% active alcohol base. Mild activity, recommended for copper, brass and other copper alloys.
Soldering Flux 115-5-65	44008	Ethylamine hydrochloride flux, 9% active; glycerine/water base. Very active, recommended for copper, brass and nickel. Especially effective on eyelet and lead-wire soldering applications with 25/75 or 10/90 solders.
Soldering Flux 115-5-67	44014	Ethylamine hydrochloride flux; 30% active; Carbowax/water base. Very active, recommended for eyelet and lead-wire solder applications on incandescent lamps with 5/95 solder.
Soldering Flux 115-5-70	44021	Similar to 115-5-67, except "active" content is 33%.
Soldering Flux 115-5-71	44022	Similar to 115-5-67 except "active" content is 20%.
Soldering Flux 115-5-72	44024	Ethylamine hydrochloride flux is 8% active; water base. Very active, contains a binder to keep flux "fixed" on solder joint.
Soldering Flux 115-5-73	44025	Similar to 115-5-67, except "active" content is 25%.

## ROSIN FLUXES

General Electric rosin based fluxes are formulated to yield good flux activity. The flux residue is non-corrosive and electrically non-conductive. These fluxes are adaptable for electrical, plumbing, and other applications.

<b>Product Designation</b>	<b>Order No.</b>	<b>Product Characteristics</b>
Soldering Flux 115-5-23	44004	Rosin flux; 5% active alcohol base. Recommended for use on relatively clean copper and copper alloys.
Soldering Flux 115-5-51	44006	Rosin flux; 40% active hydrocarbon base. Recommended for soft soldering of copper, brass and tinned steel. Useful for oily surfaces.
Soldering Flux 115-5-54	44016	Rosin flux; 38% active alcohol base. Recommended for soft soldering of copper, brass and tinned steel.
Soldering Flux 115-5-55	44001	Rosin flux; solid sticks, stearic acid base. Recommended for use on copper, brass, tin and silver. Especially effective on cable splicing applications.

## SPECIAL FLUXES

General Electric has available soldering/brazing fluxes for special applications. These applications range from soldering aluminum metals and Dumet wire, and high temperature brazing, to the formation of non-corrosive and non-conductive soldering joints.

<u>Product Designation</u>	<u>Order No.</u>	<u>Product Characteristics</u>
Soldering Flux 115-5-17	44012	Liquid organic flux—chloride-free; ethanalamine base. Recommended for use on aluminum and Dumet wire.
Soldering Flux 115-5-20	44003	Zinc analine chloride flux; 14% active; hexylene alycal base. A mildly active flux which tends to leave a protective film of inert material at the solder-base metal interface. Recommended for use on copper, brass, zinc and tinned steel.
Brazing Flux 115-5-62	44017	Brazing flux paste; 33% fluoride. Recommended for brazing of copper, brass, steel and other ferrous and non-ferrous (except aluminum) alloys.
Soldering Flux 115-5-66	44005	Viscous organic flux—chloride-free. Concentrated form of soldering flux 115-5-17. Recommended for use on highly oxidized forms of aluminum and Dumet wire. Concentration can be adjusted with water for ease of application.
Brazing Flux 115-5-68	44020	Similar to brazing flux 115-5-62, except fluoride content is 42%.
Soldering Flux 115-5-69	44019	Rosin zinc analine chloride flux; 10% active glycerine/alcohol base. Mild activity. Recommended for use on copper, copper alloys, brass, zinc and tinned steel. Will leave a protective film at the solder base metal interface.

## AVAILABILITY

Acid Fluxes	115-5-6/11/30/52—available in one-gallon containers. 115-5-64 is available in plastic pails, 25 pounds each.
Organic Fluxes	Available in one-gallon plastic containers.
Rosin Fluxes	115-5-23—available in one-pint narrow-mouth glass bottles and one-gallon plastic containers. 115-5-51/54—available in one-gallon plastic containers. 115-5-55—available in 1.5 oz. sticks; 150 sticks per carton.
Special Fluxes	115-5-17—available in one-pint or one-gallon plastic containers. 115-5-20—available in quart glass containers, 900 ml each. 115-5-62/68—available in half-gallon glass containers, 5 pounds to each. 115-5-66/69—available in one-gallon plastic containers
	<b>NOTE:</b> All one-gallon containers—4 per carton. All half-gallon containers—6 per carton. All one-pint containers—12 per carton.



## TOXICITY

The toxicological properties of soldering and brazing fluxes have not been completely defined. General Electric, 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 Substances Control Act (PL-94-469).

## FLAMMABILITY

All General Electric soldering fluxes are non-flammable except for 115-5-56/59 organic fluxes and 115-5-23/51/54/69 rosin and special fluxes. Therefore, General Electric recommends that normal precautionary practices for the safe handling and storage of flammable liquids be exercised.

## ORDERING

To order soldering and brazing fluxes, contact your local sales representative or:

### Domestic

General Electric Company  
Chemical Products Plant  
1099 Ivanhoe Road  
Cleveland, Ohio 44110  
Phone: (216) 266-4611

### International

General Electric Company  
Lamp Components Division  
International Sales  
21800 Tungsten Road  
Cleveland, Ohio 44117 U.S.A.  
Telex: 985569 (GECOLCS EUCD)  
Phone: (216) 266-3295

*General Electric's Lamp Components Division is the source for tungsten, molybdenum, glass, fused quartz, Lucalox® ceramic, phosphors, chemicals, Dumet and Cumet wire, leads, bases and other components used by the lamp, electronic, cemented carbide and other industries. Technical and engineering assistance is available on all products. For information contact:*

General Electric Company  
Lamp Components Sales Operation  
21800 Tungsten Road  
Cleveland, Ohio 44117  
(216) 266-2451  
Telex: 985569