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SMART

BORIC ACID FREE FLUX

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FLUX

NORTH AMERICA



A LINCOLN ELECTRIC COMPANY

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ECO SMART™ FLUX

ECO SMART™ IS A BORIC ACID-FREE FLUX DESIGNED WITH COLOR CHANGE TECHNOLOGY THAT INDICATES WHEN IT'S TIME TO BRAZE.



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GREEN

COLOR CHANGE - PASTE BRAZING FLUX

PART SHOWN:
ESF1PG

DESCRIPTION

For brazing steel, stainless steel, Monel®, nickel, copper, brass, bronze and other ferrous and non-ferrous metals and alloys. Use with Stay-Silv®, Safety-Silv® and other brazing filler metals. Extremely fluid. Will penetrate the tightest joints. Not subject to recrystallization (lumpiness-hardening). May be water thinned. Remove all flux residue on completion of brazing.



DETAILS

- Spatter:** Very little spatter for undiluted flux.
- Application:** Brazing rod can be dipped in the flux or flux can be brushed on the surface of the braze joint. Paste can be diluted if desired.
- Active Temperature Indication:** Flux color changes from green to clear to indicate that active temperature has been reached.
- Life - Base Metal Protection:** Excellent throughout the active range - Prevents oxidation of base metal during brazing operation. Better protection than ECO SMART™ Powder Flux.
- Flux removal:** Remove flux residue after brazing with wire brush or with hot water.
- Base Metals:** Best for copper alloys, copper, brasses, bronze, steel & Monel®. Can also be used on stainless steel and nickel. Promotes optimal bonding between like and dissimilar base metals.
- Filler Metals:** BAg, BCuP
- Brazing Methods:** Flame, and furnace brazing.
- Consistency:** Smooth, with very little separation; flux remains in suspension when stored for extended periods of time.

PART #	DESCRIPTION	SIZE	AWS SPEC.	ACTIVITY RANGE	ACTIVITY	FLUIDITY/WETTING
ESF70ZPG	FLUX - GREEN PASTE	6.5 OZ - JAR	AWS A5.31M/A5.31: FB3-A	800°F (427°C) - 1600°F (871°C)	Dissolves base metal oxides.	Excellent - Promotes filler metal flow through the braze.
ESF1/2PG	FLUX - GREEN PASTE	1/2 LB - JAR	AWS A5.31M/A5.31: FB3-A	800°F (427°C) - 1600°F (871°C)		
ESF1PG	FLUX - GREEN PASTE	1 LB - JAR	AWS A5.31M/A5.31: FB3-A	800°F (427°C) - 1600°F (871°C)		
ESF5PG	FLUX - GREEN PASTE	5 LB - JAR	AWS A5.31M/A5.31: FB3-A	800°F (427°C) - 1600°F (871°C)		
ESF25PG	FLUX - GREEN PASTE	25 LB - PAIL	AWS A5.31M/A5.31: FB3-A	800°F (427°C) - 1600°F (871°C)		



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BLACK

HIGH HEAT - PASTE BRAZING FLUX

PART SHOWN:
ESF1PB

DESCRIPTION

For brazing steel, stainless steel, carbide, Monel®, nickel, copper, brass, bronze and other ferrous and non-ferrous metals and alloys. Use with Stay-Silv®, Safety-Silv® and other brazing filler metals. High Heat flux is designed to extend the temperature and life of the flux. This is helpful during longer part heating cycles, or in cases of intense localized heating, such as induction brazing. Extremely fluid. Will penetrate the tightest joints. Not subject to recrystallization (lumpiness-hardening). May be water thinned.



DETAILS

Spatter:	Very little spatter for undiluted flux.
Application:	Brazing rod can be dipped in the flux or flux can be brushed on the surface of the braze joint. Paste can be diluted if desired.
Life - Base Metal Protection:	Excellent throughout the active range - Prevents oxidation of base metal during brazing operation. Protection at higher temperatures and longer heating cycles than ECO SMART™ color change flux.
Flux removal:	Remove flux residue after brazing with wire brush or with hot water.
Base Metals:	Best for copper alloys, copper, brasses, bronze, steel & Monel®. Can also be used on stainless steel and nickel. Promotes optimal bonding between like and dissimilar base metals.
Filler Metals:	BAg, BCuP
Brazing Methods:	Flame, induction and furnace brazing.
Consistency:	Smooth, with very little separation; flux remains in suspension when stored for extended periods of time.

PART #	DESCRIPTION	SIZE	AWS SPEC.	ACTIVITY RANGE	ACTIVITY	FLUIDITY/WETTING
ESF1/2PB	FLUX - BLACK PASTE	1/2 LB - JAR	AWS A5.31M/A5.31: FB3-C	700°F (371°C) - 1800°F (982°C)	Dissolves metallic and refractory oxides.	Excellent - Promotes filler metal flow through the braze.
ESF1PB	FLUX - BLACK PASTE	1 LB - JAR	AWS A5.31M/A5.31: FB3-C	700°F (371°C) - 1800°F (982°C)		
ESF5PB	FLUX - BLACK PASTE	5 LB - JAR	AWS A5.31M/A5.31: FB3-C	700°F (371°C) - 1800°F (982°C)		

GREEN

COLOR CHANGE - POWDER BRAZING FLUX

PART SHOWN:
ESF1/2DG

DESCRIPTION

For brazing steel, stainless steel, Monel®, nickel, copper, brass, bronze and other ferrous and non-ferrous metals and alloys. Use with Stay-Silv®, Safety-Silv® and other brazing filler metals. Extremely fluid. Will penetrate the tightest joints.



DETAILS

Application:	Flux is excellent for hot-rodding (Dipping the heated end of the brazing rod into the flux powder to achieve a flux coat). It can also be mixed with water or alcohol as needed, and applied to base metal.
Active Temperature Indication:	Flux color changes from green to clear to indicate that active temperature has been reached.
Life - Base Metal Protection:	Good throughout the active range - Prevents oxidation of base metal during brazing operation.
Flux removal:	Remove flux residue after brazing with wire brush or with hot water.
Base Metals:	Best for copper alloys, copper, brasses, bronze, steel & Monel®. Can also be used on stainless steel and nickel. Promotes optimal bonding between like and dissimilar base metals.
Filler Metals:	BAg, BCuP
Brazing Methods:	Flame, and furnace brazing.
Hygroscopicity:	Absorbs less water from the air, resulting in less clumping than fluxes containing boric acid.

PART #	DESCRIPTION	SIZE	AWS SPEC.	ACTIVITY RANGE	ACTIVITY	FLUIDITY/WETTING
ESF1/2DG	FLUX - GREEN POWDER	1/2 LB - JAR	AWS A5.31M/A5.31: FB3-F	800°F (427°C) - 1600°F (871°C)	Dissolves base metal oxides.	Excellent - Promotes filler metal flow through braze joint with points of fillet metal introduction.
ESF25DG	FLUX - GREEN POWDER	25 LB - PAIL	AWS A5.31M/A5.31: FB3-F	800°F (427°C) - 1600°F (871°C)		
ESF40DG	FLUX - GREEN POWDER	40 LB - PAIL	AWS A5.31M/A5.31: FB3-F	800°F (427°C) - 1600°F (871°C)		



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BLACK

HIGH HEAT - POWDER BRAZING FLUX

PART SHOWN:
ESF1/2DB

DESCRIPTION

For brazing carbide, steel, stainless steel, Monel®, nickel, copper, brass, bronze and other ferrous and non-ferrous metals and alloys. Use with Stay-Silv®, Safety-Silv® and other brazing filler metals. High Heat flux is designed to extend the temperature and life of the flux. This is helpful during longer part heating cycles, or in cases of intense localized heating, such as induction brazing. Extremely fluid. Will penetrate the tightest joints.



DETAILS

- Application:** Flux is excellent for hot-rodging (Dipping the heated end of the brazing rod into the flux powder to achieve a flux coat). It can also be mixed with water or alcohol as needed to form a paste, and applied to base metal.
- Life - Base Metal Protection:** Excellent throughout the active range - Prevents oxidation of base metal during brazing operation. Protection at higher temperatures and longer heating cycles than ECO SMART™ color change flux.
- Flux removal:** Remove flux residue after brazing with wire brush or with hot water.
- Base Metals:** Best for copper alloys, copper, brasses, bronze, steel & Monel®. Can also be used on stainless steel and nickel. Promotes optimal bonding between like and dissimilar base metals.
- Filler Metals:** BAg, BCuP
- Brazing Methods:** Flame, induction and furnace brazing.
- Hygroscopicity:** Absorbs less water from the air, resulting in less clumping than fluxes containing boric acid.

PART #	DESCRIPTION	SIZE	AWS SPEC.	ACTIVITY RANGE	ACTIVITY	FLUIDITY/WETTING
ESF1/2DB	FLUX - BLACK POWDER	1/2 LB - JAR	AWS A5.31M/A5.31: FB3-J	700°F (371°C) - 1800°F (982°C)	Dissolves metallic and refractory oxides.	Excellent - Promotes filler metal flow through the braze.
ESF25DB	FLUX - BLACK POWDER	25 LB - PAIL	AWS A5.31M/A5.31: FB3-J	700°F (371°C) - 1800°F (982°C)		
ESF40DB	FLUX - BLACK POWDER	40 LB - PAIL	AWS A5.31M/A5.31: FB3-J	700°F (371°C) - 1800°F (982°C)		

Does not contain Boric acid or any Sodium-Borate salts. The use of boric acid and sodium-borate salts is subject to restrictions within the European Union per Article 57 (c) of Regulation (EC) 1907/2006 - REACH (Registration, Evaluation, Authorization and Restriction of Chemicals). Studies performed for the EC (European Council) found that these chemicals can damage the reproductive systems and fetal development.

Monel® is a registered trademark of Special Metals Corporation.



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