SMART

BORIC ACID FREE FLUX

ecoSMART™
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INTRODUCING THE WORLD FIRST SMART FLUX

ecoSMART® is a unique, patent-pending flux that is designed with color change technology that lets you know when it is time to braze.

ecoSMART® boric acid free environmentally friendly formula starts out as a green color that changes to clear when the flux becomes active.

Product Features:

- Boric Acid and Borax free - Environmentally friendly
- Homogeneous mix that stays in solution or suspended paste
- Powder flux has excellent adherence when heated rod is dipped into flux
- Dissolves surface oxides and protects against oxidation during heating
- Wide activation range
- Excellent flux coverage during heating
- Easy flux residue removal

FOR MORE INFORMATION ON THIS PRODUCT PLEASE CALL CUSTOMER SERVICE

1.800.733.4533

PASTE BRAZING FLUX - **HIGH HEAT**

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. 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. Remove all flux residue on completion of brazing.

WARNING: CONTAINS FLUORIDES. Protect yourself and others. Read and understand this information. FUMES AND GASES CAN BE HAZARDOUS TO YOUR HEALTH.

BURNS EYES AND SKIN ON CONTACT.

CAN BE FATAL IF SWALLOWED. Before use read and understand the manufacturer's instructions, Material Safety Data Sheets (MSDS), and your employer's safety practices. Keep your head out of the fumes. Use enough ventilation, exhaust at the flame, or both, to keep fumes and gases from your breathing zone and the general area. Avoid contact of flux with eyes and skin. Do not take internally. Keep out of reach of children. See American National Standard Z49.1, "Safety in Welding, Cutting and Allied Processes", published by the American Welding Society, 8669 Doral Blvd. Doral, FL 33166, OSHA Safety and Health Standards, 29 CFR 1910, available from the U.S. Government Printing Office, Pittsburgh, PA. 15250. FIRST AID: If contact in eyes, flush immediately with clean water for at least 15 minutes. If swallowed, call physician immediately! Do not induce vomiting unless directed by medical personnel. Rinse mouth with water if person is conscious. Never give fluids or induce vomiting if the person is unconscious, having convulsions, or not breathing. A Material Safety Data Sheet (MSDS) for this product is attached. The MSDS contains detailed safety and health information about possible hazards associated with use of this product. Additional MSDS are available from your employer or by contacting The Harris Products Group, A Lincoln Electric Company, Mason, Ohio 45040 U.S.A.
KEEP OUT OF REACH OF CHILDREN
Made in Mexico - www.harrisproductsgroup.com

AWS Specification:	AWS A5.31M/A5.31: 2012 FB3-C
International Standard:	EN 1045 FH 12
Activity range:	371°C (700°F) - 982°C (1800°F)
Activity:	Dissolves metallic and refractory oxides.
Fluidity/Wetting:	Excellent - Promotes filler metal flow through braze.
Spatter:	Very little spatter for undiluted flux.
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.
Capillary:	Excellent
Flux removal:	Remove flux residue after brazing with wire brush with hot water.
Base Metals:	Copper alloys (copper, brasses & bronze), steels, stainless steel. Promotes optimal bonding between like and dissimilar base metals
Filler Metals:	BAg, LAg and BCup Alloys
Brazing Methods:	Flame, induction and furnace brazing.

Consistency:	Smooth, with very little separation; flux remains in suspension when stored for extended periods of time.
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.

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 Counsel) found that these chemicals can damage the reproductive systems and fetal development.

POWDER BRAZING FLUX - **HIGH HEAT**

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. 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. May be water thinned. Remove all flux residue on completion of brazing.

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AWS Specification:	AWS A5.31M/A5.31: 2012 FB3-J
International Standard:	EN 1045 FH 12
Activity range:	371°C (700°F) - 982°C (1800°F)
Activity:	Dissolves metallic and refractory oxides.
Fluidity/Wetting:	Excellent - Promotes filler metal flow through braze.
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.
Capillary:	Excellent

Flux removal :	Remove flux residue after brazing with wire brush with hot water.
Base Metals:	Copper alloys (copper, brasses & bronze), steels, stainless steel. Promotes optimal bonding between like and dissimilar base metals
Filler Metals:	BAg, LAg and BCup Alloys
Brazing Methods:	Flame, induction and furnace brazing.
Consistency:	Uniform. Not gritty.
Hygroscopicity:	Absorbs less water from the air, resulting in less clumping than fluxes containing boric acid.
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.

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 Counsel) found that these chemicals can damage the reproductive systems and fetal development.

PASTE BRAZING FLUX - **COLOR CHANGE**

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.

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BURNS EYES AND SKIN ON CONTACT.

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AWS Specification:	AWS A5.31M/A5.31: 2012 FB3-A
International Standard:	EN 1045 FH 10
Activity range:	427°C (800°F) - 871°C (1600°F)
Activity:	Dissolves base metal oxides.
Fluidity/Wetting:	Excellent - Promotes filler metal flow through braze.
Spatter:	Very little spatter for undiluted flux.
Life - Base Metal Protection:	Excellent throughout the active range - Prevents oxidation of base metal during brazing operation. Better protection than Eco Smart Powder Flux.
Capillary:	Excellent
Flux removal :	Remove flux residue after brazing with wire brush with hot water.
Base Metals:	Copper alloys (copper, brasses & bronze) Promotes optimal bonding between like and dissimilar base metals.
Filler Metals:	BAg, LAg, LCuP and BCup Alloys
Brazing Methods:	Flame, induction and furnace brazing.
Active Temperature Indication:	Flux color changes from green to clear to indicate that active temperature has been reached.
Consistency:	Smooth, with very little separation; flux remains in suspension when stored for extended periods of time.
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.

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 Counsel) found that these chemicals can damage the reproductive systems and fetal development.

POWDER BRAZING FLUX - **COLOR CHANGE**

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.

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safety and health information about possible hazards associated with use of this product. Additional MSDS are available from your employer or by contacting The Harris Products Group, A Lincoln Electric Company, Mason, Ohio 45040 U.S.A.
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AWS Specification:	AWS A5.31M/A5.31: 2012 FB3-F
International Standard:	EN 1045 FH 10
Activity range:	427°C (800°F) - 871°C (1600°F)
Activity:	Dissolves base metal oxides.
Fluidity/Wetting:	Excellent - Promotes filler metal flow through braze joint with points of fillet metal introduction.
Spatter:	No spatter for undiluted flux.
Life - Base Metal Protection:	Good throughout the active range - Prevents oxidation of base metal during brazing operation.
Capillary:	Excellent
Flux removal:	Remove flux residue after brazing. With wire brush with hot water.
Base Metals:	Copper alloys (copper, brasses & bronze) Promotes optimal bonding between like and dissimilar base metals.
Filler Metals:	BAg, LAg, LCuP and BCup Alloys
Brazing Methods:	Flame, induction and furnace brazing.
Active Temperature Indication:	Flux color changes from green to clear to indicate that active temperature has been reached.
Consistency:	Uniform. Not gritty.
Hygroscopicity:	Absorbs less water from the air, resulting in less clumping than fluxes containing boric acid.
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.

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 Counsel) found that these chemicals can damage the reproductive systems and fetal development.

A LINCOLN ELECTRIC COMPANY

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