

## Handy Flo® 135, Handy Flo® 135 DF 135, DF 135

### ***GENERAL DESCRIPTION***

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Handy Flo 135 is a high fluidity general purpose fluxing system, which has been specially formulated for dispensing applications using automated dispensing equipment. When used with appropriate silver bearing braze filler metal, Handy Flo 135 will provide sufficient fluxing action to join most ferrous and non-ferrous metals providing high strength and hermetically sealed joints. This system is recommended for automated brazing operations that require flux deposit to remain in place and not flake off or blow off the assembly during initial stages of heating operation. This product has been used in applications where controlled amount of flux is needed each time the product is applied.

This system is recommended for use in most brazing applications including torch, induction, resistance and air furnace heating methods. Handy Flo 135 is not recommended for use in a vacuum or controlled atmosphere furnace brazing operations. This product is very fluid when molten. It does not require drying prior to brazing and it will remain in place and not flake off or blow off assemblies during the brazing process. HF 135, when heated under a nitrogen atmosphere to a temperature of 975°F (525°C), shows 100% binder weight loss in tests using thermal gravimetric analysis.

Handy Flo 135 is a High-Purity Boron containing flux system which is designed specifically to assist in the brazing of such base materials as carbide and stainless steel.

The Handy Flo series are generally used in paste formulations containing braze filler metal, whereas DF 135 is a dispensable versions of Handy Flo 135 distributed as flux formulations only without the braze filler metal content.

### ***PRODUCT APPLICATION***

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Handy Flo 135 is recommended for use with braze filler metals that flow between 1100°F - 1600°F (600°C - 871°C). This product is recommended for use with many of the common Silvaloy™ alloy formulations which include silver, copper, zinc and cadmium. Handy Flo 135 has been used in various applications including electronic/electrical, automotive, plumbing, and construction industries. Handy Flo 135 includes an addition of High-Purity Boron and provides an additional 100°F (38°C) of surface protection up to 1600°F (871°C). The High-Purity Boron is more aggressive and gives better performance than the standard boron fluxes. Handy Flo 135 is recommended for joining of stainless steels, carbides, malleable iron or other hard to braze base metals.

### ***BRAZING CHARACTERISTICS***

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Handy Flo 135 and DF 135 will be very fluid when molten and can be undesirable on vertical joints, unless the joint is designed to restrict flow. This product exhibited fluid properties when molten making it good for long joints where excessive flow is necessary. These products are corrosive and a post-braze cleaning or rinsing operation is required. The flux residue is easily dissolved in hot water at temperatures of 120°F (50°C) or higher.

### ***WARRANTY & STORAGE***

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Lucas-Milhaupt, Inc. warrants their Brazing and Soldering Paste products for 90 days from the date of shipment if stored in the original unopened container. Optimal storage conditions would be 65°F (18°C) - 75°F (24°C), clean and dry. It is recommended that the paste products are stored away from direct heat. Paste may require mixing to regain a homogenous mixture before application.

# Technical Data Sheet

The 90 day warranty should not be interpreted as the shelf or useful life of the product. The paste products may be used well beyond the 90 day warranty, unless customer testing or production results indicate unsatisfactory performance of the product.

## ***AVAILABLE PACKAGING***

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Handy Flo and DF products are available in various size syringes, jars and cartridges. Paste may also be obtained in large containers repackaged for immediate pneumatic dispensing operations.

## ***SPECIFICATIONS***

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Handy Flo 135 conforms to the following specifications: N/A

DF 135 conforms to the following specifications: N/A

## ***WARRANTY CLAUSE***

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