

Handy Flo[®] 310

GENERAL DESCRIPTION

Handy Flo 310 is a clean burning, fluxless binder system used in brazing of assemblies in dry atmospheres such as nitrogen, hydrogen, argon, dissociated ammonia and vacuum. This system, when blended with an appropriate filler metal, will form a paste that exhibits little slump when heated. HF310 can be dispensed through standard dispensing equipment. When heated under a nitrogen atmosphere to a temperature of 855°F (457°C), Handy Flo 310 shows 100% weight loss in tests using thermal gravimetric analysis.

PRODUCT APPLICATION

Handy Flo 310 is recommended for use with high purity braze filler metals that flow above 1100°F (593°C) and include (but is not limited) to the following braze filler metals:

Product Name	AWS Designation	Solidus		Liquidus		Nominal Composition			
		°F	°C	°F	°C	Ag	Cu	Ni	Other
Premabraz 131	BVAu-4	1740	949	1740	949			18	82 Au
Premabraz 616	BVAg-29	1155	625	1305	705	61.5	24		14.5 In
Silvaloy 604	BVAg-18	1115	600	1325	720	60	30		10 Sn
Silvaloy 559	BVAg-13a	1420	770	1640	895	56	42	2	
Silvaloy 721	BVAg-8	1435	780	1435	780	72	28		

BRAZING CHARACTERISTICS

Handy Flo 310 offers good vertical slump characteristics and tends to be restrictive. The paste deposit should be heated slowly during the initial preheat as it can spatter if heated too quickly. This system dries slowly and will not flake off the parts prior to heating operation; this allows pre-pasting of assemblies several hours prior to brazing operation. Handy Flo 310 is exceptionally clean burning. There is no residue following the brazing process. This product is recommended for dry hydrogen (H₂) atmosphere or vacuum.

WARRANTY & STORAGE

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.

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.

SPECIFICATIONS

Handy Flo 310 conforms to the following specifications: N/A

APPLICABLE PRODUCT CODE(S)

The applicable Lucas-Milhaupt product code(s) for this technical data sheet: 83-310.

SAFETY INFORMATION

The operation and maintenance of brazing equipment or facility should conform to the provisions of American National Standard (ANSI) Z49.1, "Safety in Welding and Cutting". For more complete information, refer to the Material Safety Data Sheet for Handy Flo 310.

WARRANTY CLAUSE

Lucas-Milhaupt, Inc. believes the information contained herein to be reliable. However, the information is given by Lucas-Milhaupt, Inc. without charge and the user shall use such information at its own discretion and risk. This information is provided on an "AS IS" AND "AS AVAILABLE" basis and Lucas-Milhaupt, Inc. specifically disclaims warranties of any kind, either express or implied, including, but not limited to, warranties of title or implied warranties of merchantability or fitness for a particular purpose. No oral advice or written or electronically delivered information given by Lucas-Milhaupt, Inc. or any of its officers, directors, employees, or agents shall create any warranty. Lucas-Milhaupt, Inc. assumes no responsibility for results obtained or damages incurred from the use of such information in whole or in part.