

ALPHA[®] CRR-W1 READY RIBBON[®] FLUX

White Ready Ribbon Flux for PV Ribbon Coating

DESCRIPTION

ALPHA CRR-W1 Ready Ribbon Flux is a white colored alcohol based, zero-rosin, halogen, and halide free, no-clean flux specifically designed to use for coating photovoltaic (PV) Ready Ribbon. When **ALPHA CRR-W1 Ready Ribbon Flux** is applied on the ribbon, it yields reflectivity increasing the power efficiency of the solar module.

ALPHA CRR-W1 Ready Ribbon Flux eliminates the need for module assemblers to apply liquid flux during either manual or automated stringing operations. This virtually eliminates all the effort and costs associated with buying, storing, and using a liquid flux. It also eliminates a potential hazard from the workplace if the liquid flux being used is flammable.

ALPHA CRR-W1 Ready Ribbon Flux is designed to be pliable, so it does not chip or flake during handling or feeding in automated Combined Tapping and Stringing (CTS) equipment. The flux system activates at normal soldering temperatures so it can be dropped into most current liquid flux processes. It is low in residues and non-tacky, minimizing the time requires for equipment maintenance and reducing machine downtime. Flux forms a uniform coating on Ready Ribbon resulting uniformly coated white spool.

ALPHA CRR-W1 Ready Ribbon Flux is also specifically designed to meet the demanding requirements of the Photovoltaic industry when higher pull strength is deemed necessary.

READ ENTIRE TECHNICAL DATA SHEET BEFORE USING THIS PRODUCT

FEATURES & BENEFITS

Features	Benefits
Reflective coating	<ul style="list-style-type: none"> Improves reflectivity up to 36% enhancing power output of PV module Excellent lightfastness and color durability
Eliminates module assembler issues associated with assembling cSi modules using a liquid flux	<ul style="list-style-type: none"> Increase throughput by maximizing production equipment up-time Reduces flux related system maintenance including cleaning of residues and replacement of corroded parts Eliminates the presence of flammable material (flux) from module assembler production and inventory Minimizes impact of residues on modules assembled using systems where the flux is applied directly on the cell
Drop into the most existing assembly process	<ul style="list-style-type: none"> Easy transition to fluxless processing by the end customer Works well on all the most popular CTS equipment
Unique flux chemistry that is uniformly applied	<ul style="list-style-type: none"> Tack-free residues for clean operation Fast wetting speed improves production yield Uniform coating and a consistent amount of flux deliver optimum peel strength No change in module reliability

APPLICATION GUIDELINES

ALPHA CRR-W1 Ready Ribbon Flux is engineered to support Ready Ribbon coating process for standard solar module assembly applications. This flux has a wide process window and works well with most soldering processes. This is a no-clean flux, no cleaning is needed. It is recommended that flux should be bead milled or stirred at high speed (>7000 rpm) for 4 to 5 hours to get uniform dispersion.

TECHNICAL DATA

Parameter	Typical Value	Parameter	Typical Values
Appearance	White color Suspension	pH, (5% solution, Base)	3.3 to 4.7
Specific Gravity @ 25 °C (77 °F)	0.790 to 0.820	Flash Point (T.C.C.)	12 °C
IPC J-STD-004 Designation	ORL0	Shelf Life	6 months

CORROSION & ELECTRICAL TESTING
Corrosion Test

Test	Requirements	Results
Copper Mirror Test IPC-TM 650 Test Method 2.3.32	No evidence of mirror breakthrough	No evidence of mirror breakthrough. Classified as "L"
Copper Corrosion Test IPC-TM 650 Test Method 2.6.15	No evidence of corrosion	No corrosion and pitting was observed. Classified as "L"

RECYCLING SERVICES

We provide safe and efficient recycling services to help companies meet their environmental and legislative requirements and at the same time, maximize the value of their waste streams.

Our service collects solder dross, solder scrap, and various forms of solder paste waste. Please contact your local sales representative for recycling capabilities in your area or [link here](#).



SAFETY & WARNING

It is recommended that the company/operator read and review the Safety Data Sheets for the appropriate health and safety warnings before use. **Safety Data Sheets are available at MacdermidAlpha.com/assembly-solutions/knowledge-base.**

STORAGE

Recommend to store **ALPHA CRR-W1 Ready Ribbon Flux** at temperatures between 10 to 42 °C. An unopened container stored under these conditions has a storage period up to 6 months.

CONTACT INFORMATION

**To confirm this document is the most recent version, please contact
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www.macdermidalpha.com**

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Also read carefully warning and safety information on the Safety Data Sheet. This data sheet contains technical information required for safe and economical operation of this product. READ IT THOROUGHLY PRIOR TO PRODUCT USE. Emergency safety directory assistance: US 1 202 464 2554, Europe + 44 1235 239 670, Asia + 65 3158 1074, Brazil 0800 707 7022 and 0800 172 020, Mexico 01800 002 1400 and (55) 5559 1588

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