

Nitinol Soldering Kit

Contents

- Indalloy® #121 (96.5Sn 3.5Ag 0.030") solder wire
- Indalloy® Flux #2
- Indalloy® Flux #3
- Nitinol #1 wire 0.017"

Nitinol requires a strong flux to remove surface oxides to facilitate wetting of the solder to the surface.



Indalloy® Flux #2

Indalloy® Flux #2 is a specialty, acid-based flux formulated for soldering Nitinol. It also works on high chromium-containing alloys including stainless steel.

Indalloy® Flux #2 is compatible with all types of solders. It can be brushed on, dispensed or sprayed. All application equipment should be acid resistant. It is not recommended for electronics applications.

Indalloy® Flux #3

Indalloy® Flux #3 is a high viscosity liquid flux formulated for soldering Nitinol. It also works on aluminum.

Indalloy® Flux #3 works best with tin-containing alloys and because of its higher viscosity, is best applied by brush or swab. Any flux equipment should be resistant to halide corrosion. It is not recommended for indium-containing alloys or electronics applications.

Flux Technical Specifications

	Flux #2 (P/N 84002)	Flux #3 (P/N 84003)
Activation Range	100-371 °C	96-343 °C
Specific Gravity	1.53 gm/cc	1.33 gm/cc
Flash Point	Non-flammable	93 °C
Chloride Content	No zinc or other heavy metal chlorides	Contains chlorides
pH	1-1.5	8
Appearance	Water white	Yellow to pale green
Cleaning	Warm water (<50 °C) and mechanical scrubbing	Warm water (<50 °C) and mechanical scrubbing
Shipping	Transport in accordance with applicable regulations and requirements	Transport in accordance with applicable regulations and requirements

Cleaning

Flux residue removal is mandatory and may be accomplished by means of warm water and mechanical scrubbing. Cleaning should be performed as soon as possible after the soldering operation to avoid corrosion. The cleaning water temperature should not exceed 50 °C. Excessive water temperature may cause secondary reactions and result in corrosion and/or pitting. A warm water sonication may also be a means of flux residue removal.

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Form No. 98790 (A4) R0

www.indium.com

askus@indium.com

ASIA: Singapore, Cheongju, Malaysia: +65 6268 8678
 CHINA: Suzhou, Shenzhen: +86 (0)512 628 34900
 EUROPE: Milton Keynes, Torino: +44 (0) 1908 580400
 USA: Utica, Clinton, Chicago, Rome: +1 315 853 4900



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Nitinol Wire Specifications

Nitinol #1		
Austenitic Finish Temperature (Af)	10-18 °C	
Flash Point	Non-flammable	
Chemical Composition	Element	Weight %
	Nickel	54.5 to 57.0 (Ref.)
	Titanium	Balance
	Carbon	<0.05 (500 PPM max.)
	Cobalt	<0.05 (500 PPM max.)
	Copper	<0.01 (100 PPM max.)
	Chromium	<0.01 (100 PPM max.)
	Hydrogen	<0.005 (50 PPM max.)
	Iron	<0.03 (300 PPM max.)
	Niobium	<0.025 (250 PPM max.)
	Oxygen	<0.05 (500 PPM max.)
	Any Single Trace Element	<0.1
	Total Trace Elements	<0.25
Ultimate Tensile Strength	> 180,000 psi	
Appearance	Shiny light brown color	
Cleaning	Alcohol wipe	
Shipping	Transport in accordance with applicable regulations and requirements	

Nitinol courtesy of Fort Wayne Metals.

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