



# TECHNICAL DATA SHEET

CATEGORY: AdherAlloy™

## FEATURES

- LEAD-FREE • HIGH ADHESION • FLUXLESS • MP=220/120°C

## DESCRIPTION

Adhera Technologies is providing lead-free (RoHS compliant) fluxless bonding solutions. Our patented high temperature/ high reliability alloys are used in electronic assemblies, die attachment, flip-chip packaging, sputter target mounting, graphite-foam attachment, metal-to-glass bonding, ceramic bonding, and other applications where bonding is challenging. These materials also exhibit excellent creep-resistant behavior and are suitable for optical fiber mounting and other optoelectronic assemblies. Our low temperature alloys provide high adhesion solutions where high temperature excursions are prohibited. These materials are excellent candidates for creating hermetic seals and do not outgas, which is common to epoxy materials. Bond strengths are extremely high due to strong chemical bonds and no metallization is required. All alloys are available in ingot, wire, and foil forms.

## PROPERTIES

<b>Materials Properties</b>	<b>AS1L</b>	<b>AS2LC</b>	<b>AS3EC</b>	<b>AS4IE</b>
<b>Melting Point (°C)</b>	221	221	221	118
<b>Density (g/cm<sup>3</sup>)</b>	7.48	7.54	7.44	7.38
<b>Coefficient Of Thermal Expansion (10<sup>-8</sup>/ °C)</b>	21	40	39	20
<b>Elastic Modulus (GPa)</b>	26.2	54	53	--
<b>Tensile Strength (MPa)</b>	50	48.3	48	12
<b>Electrical Resistivity (μΩ·cm)</b>	12.3	13	13	14
<b>Creep Resistance</b>	High	High	High	Low
<b>Available Forms</b>	Ingot, wire, and foil			

## RECOMMENDED TEMPERATURE REQUIREMENTS

Best practices for soldering require that assembly parts be preheated to temperatures 50°C higher than the melting point of the solder. The soldering iron tip should be 355 - 410°C.

## HANDLING/SAFETY

Refer to the specific Material Safety Data Sheet for handling instructions. Use with adequate ventilation and proper personal protective equipment is suggested.

## STORAGE AND SHELF LIFE:

Storage must be in a dry, non-corrosive environment. Materials perform best within six months of purchase. With time, the solder surface may lose its shine and appear gray. This surface phenomenon is not detrimental to the product's functionality.