

ALUMINIUM **BRAZING FLUXES**

Honeywell

HONEYWELL FLUXES – ROBUST BRAZING PROCESS

The unique properties of Honeywell Potassium fluoroaluminate – sometimes also referred to as ‘Al Flux 2805’ – make it a leading flux agent for aluminium brazing in controlled atmosphere and flame brazing. Our potassium fluoroaluminate is approved and used by leading brazing companies globally.

Key features of Honeywell Potassium fluoroaluminate include a low melting point and controlled particle size distribution. Customers benefit from improved brazing performance, stabilised brazing processes, increased manufacturing efficiency and lower costs.

TEN GOOD REASONS

Honeywell Aluminium Brazing Fluxes



1 Long-term Experience and Expertise



6 Secured Supply of Honeywell Al-Flux 2805



2 High Quality Material ‘Made in Germany’



7 Low Melting Point



3 Broad Product Portfolio



8 Controlled Particle Size



4 Focus on Innovation



9 Improved Eco-balance and Efficiency



5 Global Reach and Service Capabilities



10 Robust and Stable Brazing Process

INTRODUCTION

Aluminium has shown significant growth as the material of choice for many applications over the past few decades. Light weight, high strength, conductivity, brazeability, formability and corrosion durability make this readily available metal an attractive substitute for steel and copper heat exchangers.

Aluminium is easily formed into components that can be assembled together and brazed to produce complex configurations. It is the dominant material used for automotive heat exchanger production and there is a growing trend for conversion to aluminium in HVAC&R and other industries.

For aluminium brazing, a filler metal with a melting point lower than that of the base alloy and a flux are necessary to form joints. The aluminium brazing flux disrupts the natural surface oxide, prevents re-oxidation, and promotes wetting and spreading of the filler metal into joints. Flux can be applied as a powder (either wet or dry application) or as a formulated paint or paste.

HONEYWELL ALUMINIUM BRAZING MATERIALS

Honeywell Fine Chemicals is part of Honeywell Performance Materials & Technologies – a global leader in advanced materials, process technologies and automation solutions.

Originally founded as Riedel-de Haen® we look back on more than 200 years experience in developing and manufacturing high purity fine chemicals. Honeywell Fine Chemicals has gained a global reputation for extensive expertise and comprehensive technological know-how in the field of high quality metal salts and complex fluorides.

Honeywell Fine Chemicals has been supplying industry with brazing fluxes for more than 20 years. While in the past Honeywell Potassium fluoroaluminate,

sometimes also referred to as “Al Flux 2805”, was supplied by third parties, we are now serving end-users directly or are in close collaboration with selected partners.

Aluminium brazing materials are manufactured at the Honeywell plant in Seelze, near Hanover, Germany.

The site is certified against TS 16949, OSHA 18001, DIN/ISO 19001 and 14001. We provide Global Service through local footprints:

- Local Sales Force
- Global Supply Chain Management with local warehousing
- Global Technical Service
- Expanding Global Network supported by local industry specialists





FOCUS ON INNOVATION

Honeywell Fine Chemicals offers consistent high quality brazing solutions, is committed to environmental preservation and the development of sustainable innovative Product, Process and Supply Chain solutions.

We strive to help our customers:

- Improve brazing performance
- Stabilise brazing processes
- Increase manufacturing efficiency
- Lower costs
- Enhance safe product handling and ease processing

Based on our extensive experience in fluoride chemistry and the manufacturing of high purity metal salts, Honeywell Fine Chemicals is capable of meeting evolving needs and requirements of the aluminium brazing industry. We are committed to offer solutions that will refine existing Controlled Atmosphere Brazing (CAB) and flame brazing technology.

PRODUCT RANGE

Honeywell Fine Chemicals offers a wide, highly specialised range of products for aluminium brazing:

PRODUCTS FOR ALUMINIUM BRAZING	
FLUXING AGENTS	Different grades of Potassium fluoroaluminate
	Cesium fluoroaluminate for high magnesium-containing aluminium alloys
	Non-inhalable dust grades
	Powder blends
FLUX FORMULATIONS (NON CORROSIVE)	Flux suspension
	Paint flux
	Flux paste
	Brazing paste
	Jet Applied Brazing Flux
ADDITIVES	Fluoride based additives

In addition to standard formulations we have the expertise to adapt brazing fluxes to fit the individual environments and equipment of our customers. Honeywell Fine Chemicals provides multiple packaging options to ease handling and fulfil customer requirements.

Our product portfolio is constantly expanding to complement the existing range of high quality, consistent and reliable fluxes to serve customers in the following industries:

- Automotive
- PVT - Photovoltaic energy harvesting (Solar)
- Heating, Ventilation, Air Conditioning, Cooling (HVAC)
- Industrial equipment
- Heavy duty vehicles
- Aerospace
- Brazing consumables
- White goods



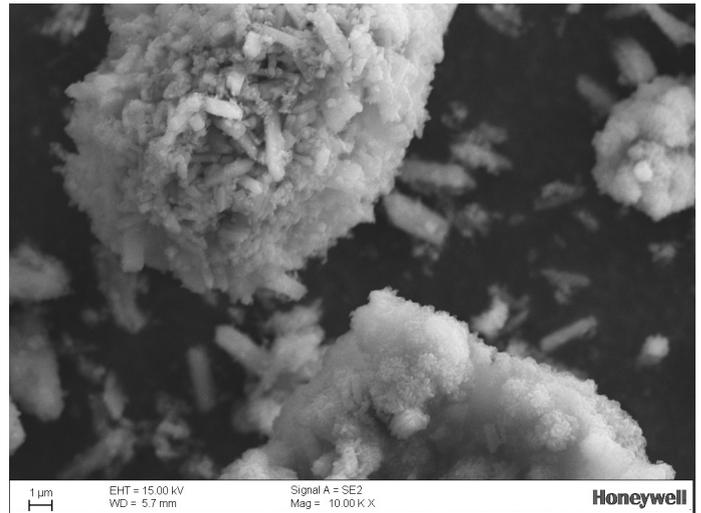
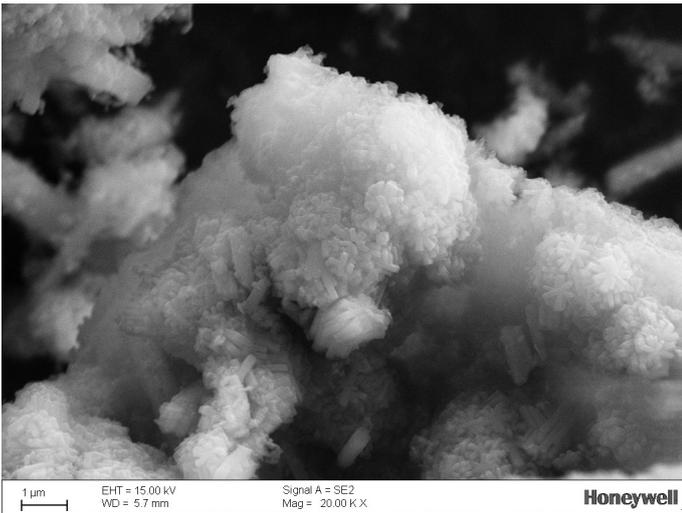
ADVANTAGES OF HONEYWELL POTASSIUM FLUOROALUMINATE

Honeywell Potassium fluoroaluminate is characterised by a uniform amorphous and less abrasive morphology and a high reactivity with aluminium oxide.

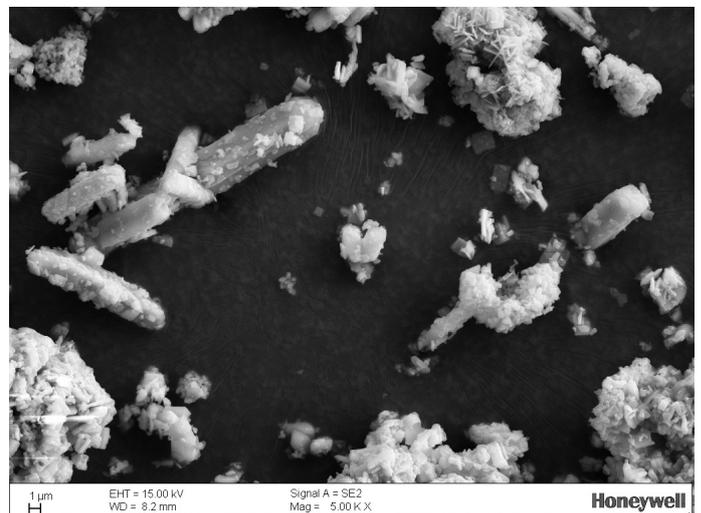
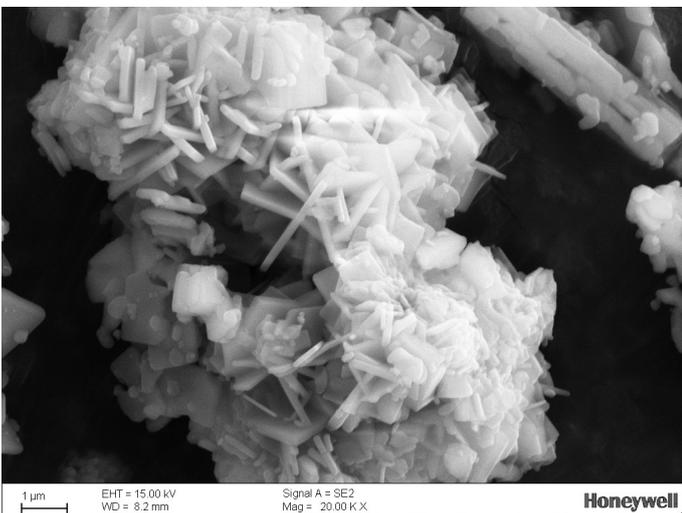
ADVANTAGES

- Low melting point saves brazing time and energy cost
- Reduced risk of corrosion and abrasion of your brazed parts leading to improved lifetime
- Controlled and narrow particle size distribution
- Excellent free-flow and dispersion properties

Honeywell Flux



Competitive Flux



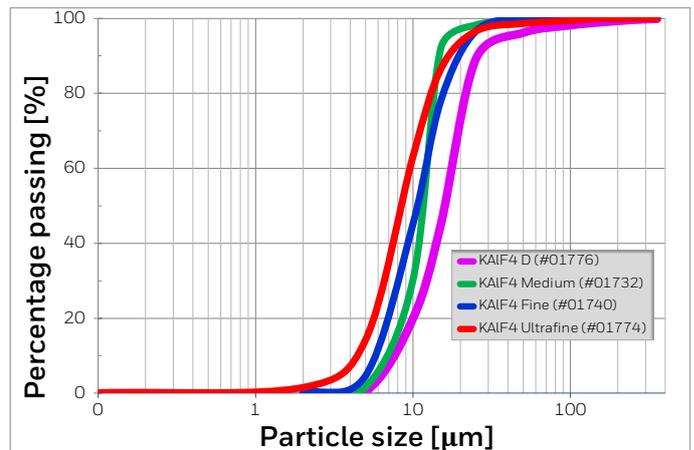
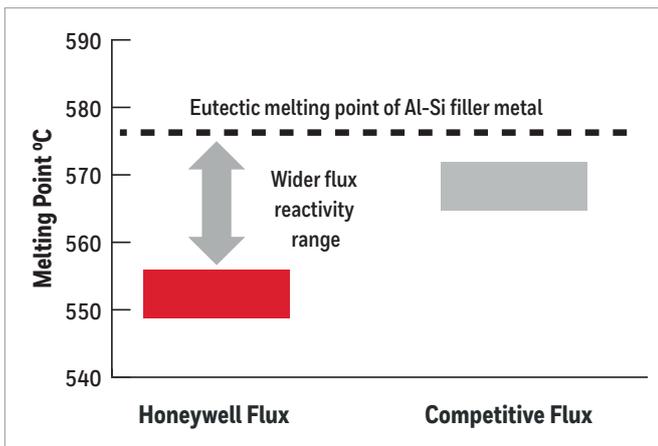


LOW MELTING POINT

- Unique multi-constituent phase with amorphous amounts providing **melting point of $552 \pm 3.0^\circ\text{C}$**
- Melting Point **25 °C lower** than eutectic melting point of Al-Si filler metal

CUSTOMER BENEFITS:

- Wider flux reactivity range
- Up to 20% extra time for improved cleaning and oxide removal
- Energy savings drive eco-balance and reduce cost
- Higher reactivity enables lower flux loading
- **Robust brazing process**



CONTROLLED PARTICLE SIZE

- Controlled particle sizes to meet and exceed customer product and process requirements
- Narrow particle size distribution
- High batch-to-batch consistency
- Fast and complete dispersion in solution and slow settling

CUSTOMER BENEFITS:

- Homogeneous distribution on parts and in paints / pastes
- Easy and fast dispense due to uniformity of particles
- No plugging of nozzles and pipes
- No material loss on filters
- No yield loss due to assembly defects
- Uniform surface coverage
- **Robust brazing process**



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BRO-24-09-EN | 04/24
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**THE
FUTURE
IS
WHAT
WE
MAKE IT**

Honeywell