

# Welcome to the Accelerator Hub

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Global  
**Urban &  
Advanced Air**  
Summit  
2-3 March 2022

SHAPING THE FUTURE OF AIR TRAVEL

ORGANISED BY

**FARNBOROUGH**  
INTERNATIONAL



# ADHESIVES – THE SUCCESS FACTOR FOR YOUR EVTOL DEVELOPMENT

Mareike Noack | Aviation, Space & Rail | GUAAS | March 2022

# HENKEL AT A GLANCE – WHO ARE WE?

SALES  
**€19.2** BN



MORE THAN  
**145** YEARS  
SUCCESS WITH  
BRANDS AND  
TECHNOLOGIES



WE ARE ACTIVE IN  
**78**  
COUNTRIES

THREE BUSINESS UNITS  
**ADHESIVE TECHNOLOGIES**  
**BEAUTY CARE**  
**LAUNDRY & HOME CARE**

**€3.2** BN  
ADJUSTED  
OPERATING  
PROFIT (EBIT)



LEADING IN  
SUSTAINABILITY  
**+64%**  
RESOURCE  
EFFICIENCY



AROUND  
**2,700**  
SOCIAL PROJECTS  
SUPPORTED



WE EMPLOY  
MORE THAN  
**52,900**  
PEOPLE  
WORLDWIDE FROM  
120 NATIONALITIES



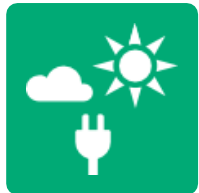
AROUND  
**37%**  
WOMEN IN  
MANAGEMENT

# OUR VISION IN RESPONSE

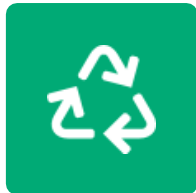
# TO THE GLOBAL CHALLENGES

We lead with technologies and solutions in bonding, sealing and coating that will have an impact on solving current and future global environmental and social challenges.

CO<sub>2</sub>/energy saving  
& dematerialization



Circular Economy



Health & Safety



Water



# HENKEL AEROSPACE

## HOW WE CAN SUPPORT INNOVATION IN ADVANCED AIR MOBILITY



### AEROSPACE EXPERTISE

- History & **expertise in aerospace adhesives & coatings**
- Henkel materials qualified on over 5000 Aerospace OEM specifications



### TECHNOLOGY LEVERAGE

- Technology and **experience leveraged from adjacent industries**
- e-mobility (Electromobility)
  - Power Conversion & Industrial Automation
  - Datacom/Telecom



### GLOBAL FOOTPRINT

Global footprint with **innovation, production & commercial** functions in each region

> **Henkel can contribute to the future of the industry by partnering with UAM leaders early during the design phase**





# LIGHTWEIGHT AIRCRAFT DESIGNS

Switching to Composites can **significantly reduce weight on aircrafts to up to 50%** compared to parts made of aluminum or titanium alternatives to overcome battery power-density challenges.

Film adhesives that protect the eVTOL surface from lightning strike is key for a long life-span.

3D Printing allows to **individualize parts** and with the first 3D printing material that meets **aerospace FST requirements** safety is always on board.



# STRUCTURAL BONDING

## ENHANCE PERFORMANCE AND SAFETY

- Film adhesives
  - Peel ply
  - Surfacing film
  - Lightning strike protection
  - Syntactic film
- Paste adhesives
  - Metal composite bonding
  - Liquid shim
  - Potting compounds





# ▶ LOCTITE EA 9695 AERO STRUCTURAL FILM

- Excellent environmental resistance
- Co-cure and pre-cured laminates
- Allows 121°C and 177°C cure (250°F; 350°F)
- Long out time at shop floor



# WINDSHIELD BONDING – DIRECT GLAZING

## LEVERAGING ADJACENT INDUSTRY PORTFOLIOS



- Windshield bonding already used in trains, cars and agriculture vehicles
- Evaluation on-going for Aerospace Applications
- Different technologies available tailored to your production needs
- Great solution for MRO applications

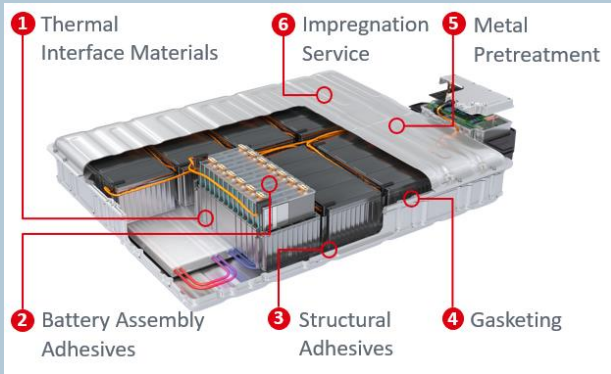
# ► TEROSON PU 8630 HMLC ELASTOMERIC BONDING

- 2-component direct glazing adhesive
- High modulus
- low conductivity
- Homogeneous environmentally independent curing
- Excellent adhesion to glass and painted surfaces in connection with a black primer

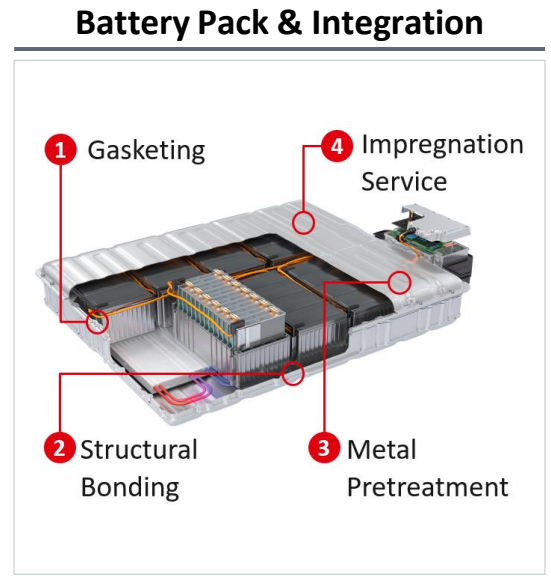
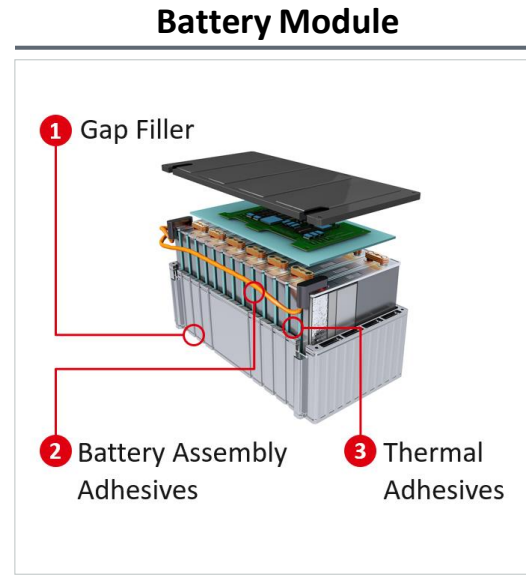
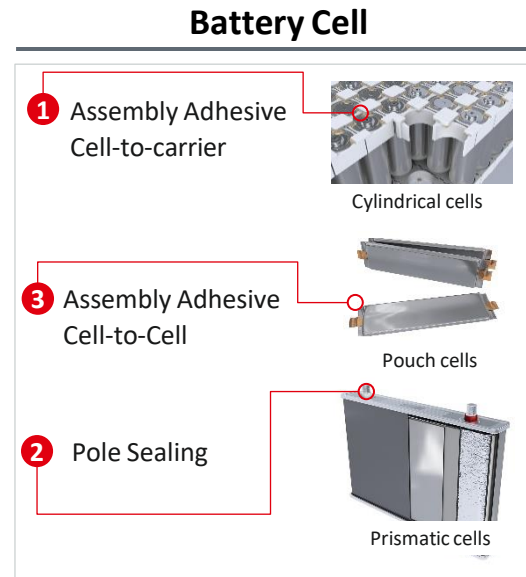


# BATTERY SOLUTION – LIGHTWEIGHT AND SAFE

## LEVERAGING ADJACENT INDUSTRY PORTFOLIOS



- High thermal management
- UL 94
- High-speed cure for large scale battery cell assembly



# ▶ SONDERHOFF SOLUTION

## THERMAL PROPAGATION PREVENTION

### KEY CHALLENGE



#### Prevent thermal propagation

- Blocks heat transfer from cell to cell

#### Light weight

- Low density material

#### Chemistry Type

Polyurethane

#### Technology

2C-system

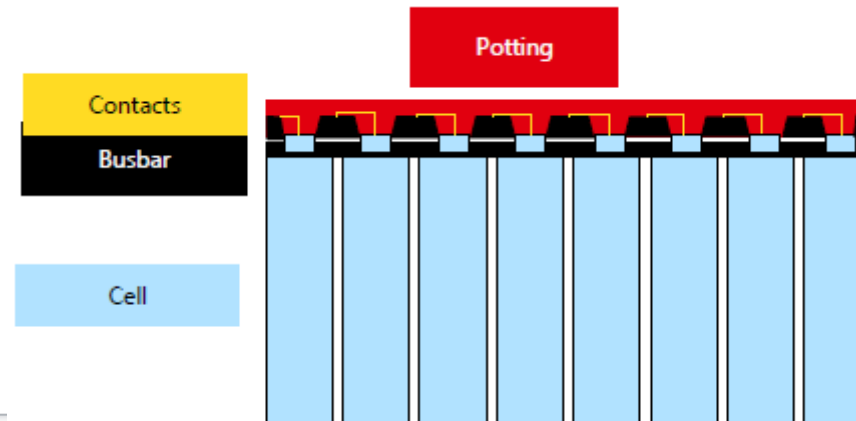
#### Curing Mechanism

Addition, RTC



### CUSTOMER BENEFITS

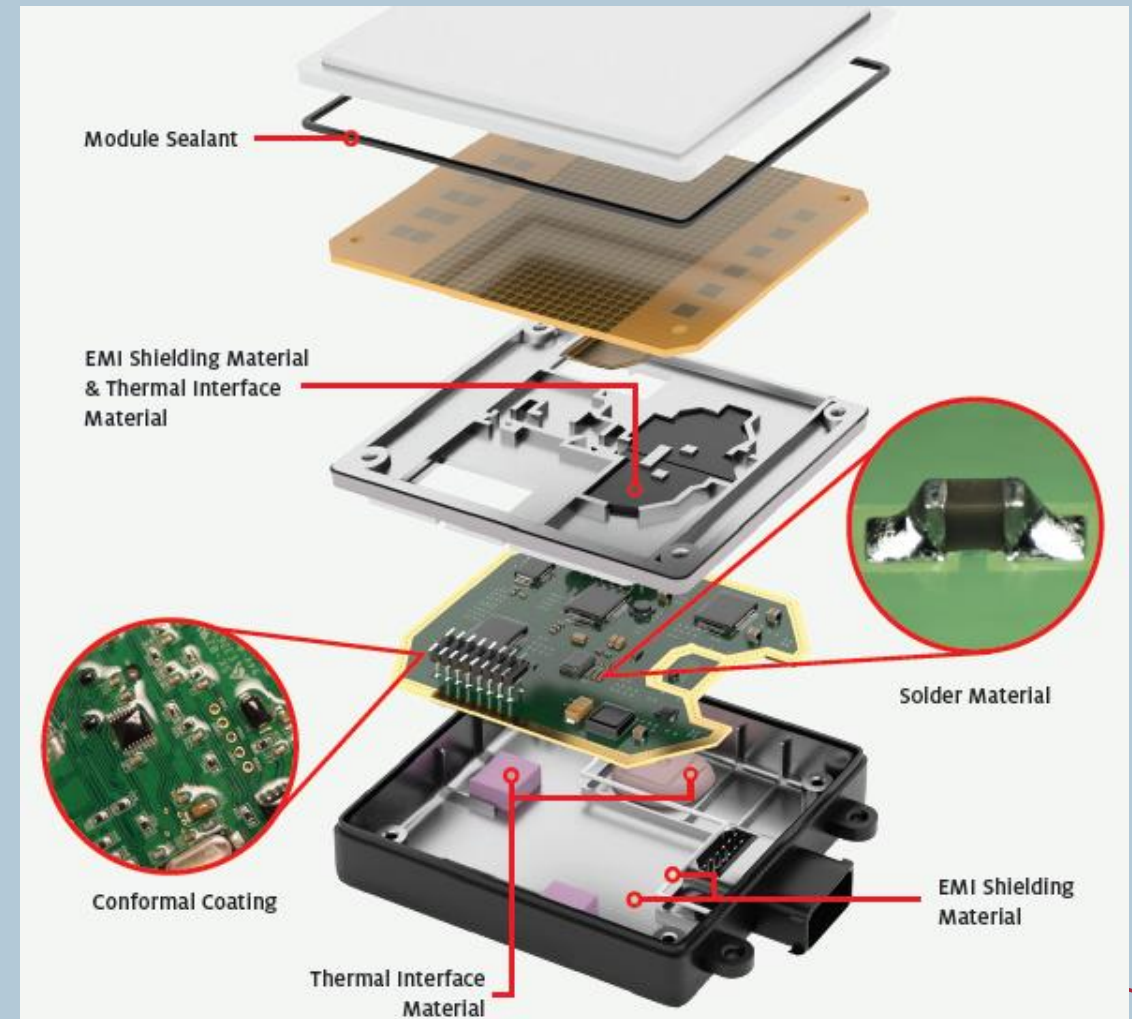
- Prevent thermal propagation
- Light weight, low density foam material
- Predominantly closed cellular foam structure
- Less mechanical module fixation needed



# ELECTRONICS PORTFOLIO

## SUPPORTS HIGH REQUIREMENTS OF ELECTRIFICATION

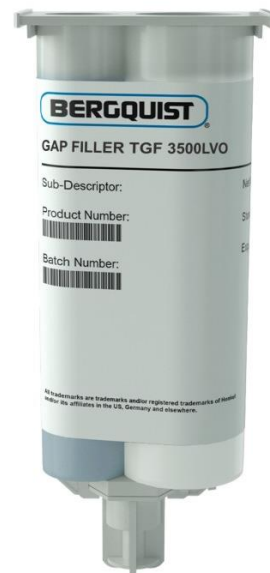
- Supplier of choice for Automotive, wearables, Photovoltaic, Medical and Aerospace OEMs
- Reliable products for protecting and mounting PCBs
- Wide range of ECAs, NCAs
- Printed electronics
  - De-icing
- TIM materials

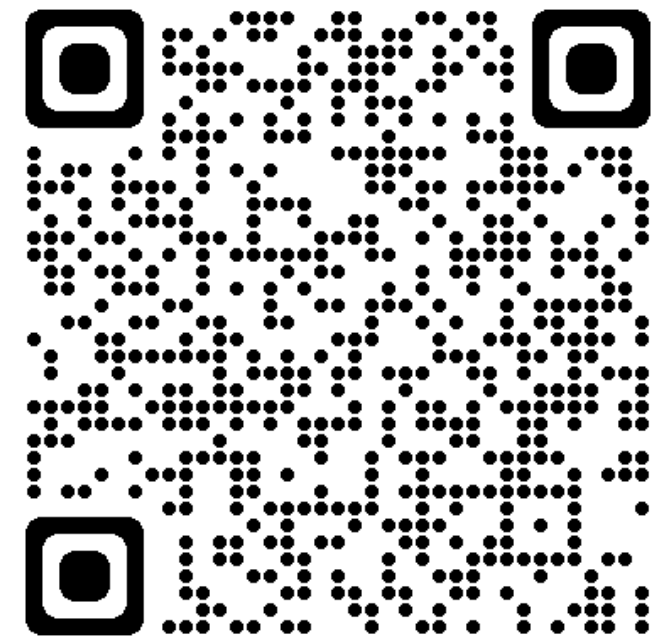


# ▶ BERGQUIST GAP FILLER TGF 3500LVO

## THERMAL INTERFACE MATERIAL

- RT cure
- High thermal conductivity of 3,5W/mK
- Low volatility for outgassing and silicone sensitive applications
- Easy to apply & ultra-conforming with excellent wet-out for low stress interface applications





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**Mareike Noack**  
**Market Segment Manager UAM**

**THANKS FOR JOINING ME!**

*Sustainability. Innovation. Urban Air Mobility*





**Sustainability.**

**Innovation.**

Urban Air Mobility.

Mareike Noack | Market Segment Manager UAM

The Henkel logo, consisting of the word "Henkel" in a white, sans-serif font inside a white oval with a thin black border.