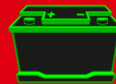


# HENKEL SOLUTIONS

LONDRINA 17/10



**FENIBAT**  
6ª Feira Nacional e Internacional de  
Baterias de Chumbo + Conferência



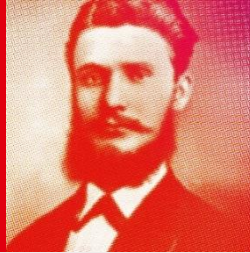
# AGENDA

- 01 **OVERVIEW HENKEL & ADHESIVES TECHNOLOGY**
- 02 AUTOMOTIVE COMPONENTS BUSINESS
- 03 OUR FOUR MARKET SEGMENTS
  - E-MOBILITY
  - CONVENTIONAL BATTERY SOLUTION



SALES

€22.4<sub>BN</sub>



-55%

LESS CO<sub>2</sub> EMISSIONS  
PER TON OF PRODUCT<sup>1</sup>

SOCIAL PROJECTS

2,055

€2.3<sub>BN</sub>

ADJUSTED OPERATING  
PROFIT (EBIT)

146 YEARS

SUCCESS WITH  
BRANDS AND  
TECHNOLOGIES



WE EMPLOY MORE THAN

50,000

PEOPLE FROM  
124 NATIONALITIES



AROUND

39%

WOMEN IN  
MANAGEMENT

<sup>1</sup> Compared to the base year 2010.

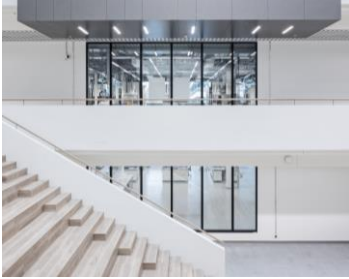
**>130,000**  
DIRECT  
CUSTOMERS



**9**  
STRATEGIC  
BUSINESS  
UNITS



**12**  
TECHNOLOGY  
PLATFORMS



**Henkel**  
**ADHESIVE  
TECHNOLOGIES**



**>800**  
INDUSTRY  
SEGMENTS



**~6,500**  
CUSTOMER  
FACING  
EXPERTS



**>150**  
COUNTRIES  
WITH MARKET  
PRESENCE



**133**  
PLANTS  
AROUND  
THE GLOBE



# LEADING POSITIONS IN INDUSTRIAL AND CONSUMER BUSINESSES



ADHESIVE TECHNOLOGIES

**LOCTITE** **TECHNOMELT** **BONDERITE**



CONSUMER BRANDS

**Persil**

Schwarzkopf



syoss

# ADHESIVES TECHNOLOGY

## LEADING POSITIONS ACROSS INDUSTRIES & TECHNOLOGIES

### Mobility & Electronics



Automotive OEMs & components, e-mobility, metal coil, electronics, semiconductor packaging, aerospace, industrial assembly

**#1 worldwide**

### Packaging & Consumer Goods



Food & beverage, hygiene, metal and flexible packaging, sports & fashion

**#1 worldwide**

### Craftsmen, Construction & Professional

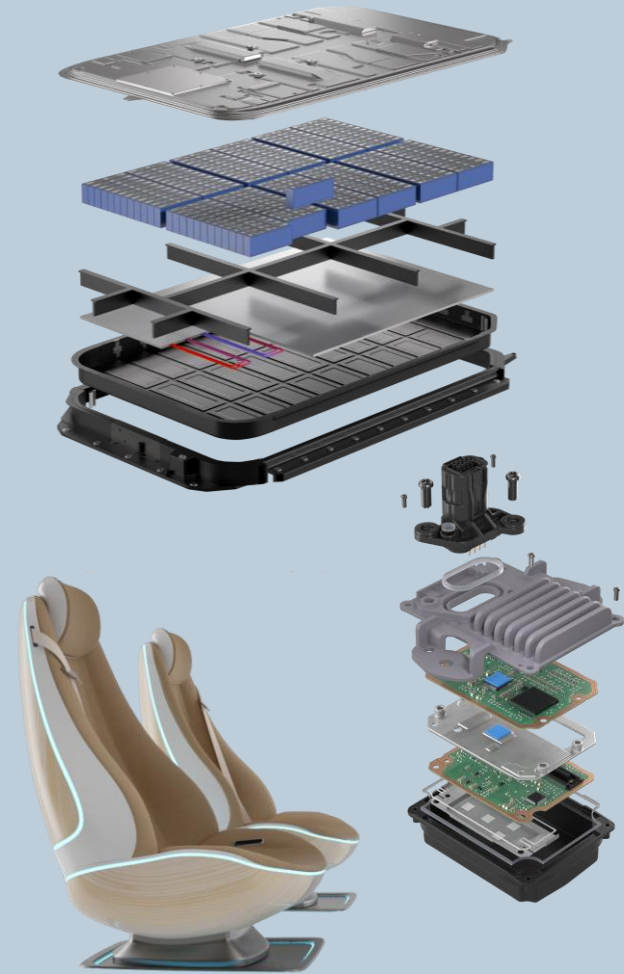


DIY, craftsmen, construction, engineered wood, professional users in manufacturing & maintenance

**#2 worldwide**

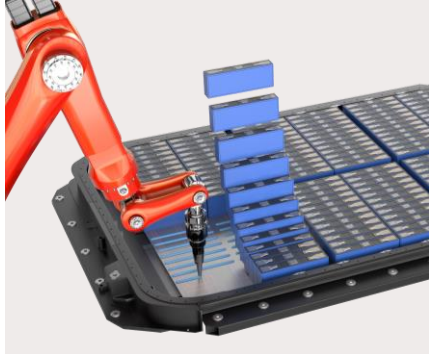
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# ADHESIVES TECHNOLOGY

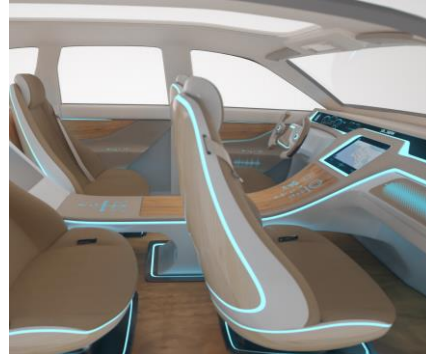
## *AUTOMOTIVE COMPONENTS*



E-Mobility



Automotive Electronics



Exterior, Powertrain,  
Interior & Chassis



Surface Treatment,  
Cleaners & Lubricants

- Shaping the automotive industry with high-impact solutions to bond, seal, coat and protect components
- Serving the disruptive trends of autonomous driving, e-mobility, lightweighting and sustainability



# HENKEL AS KEY SUPPLIER FOR THE AUTOMOTIVE INDUSTRY

## Trusted Partner of OEMs & Tier 1 Suppliers



- Global business serving every major OEM and Tier 1 supplier
- Henkel solutions in >90% of every car on the road
- >10,000 customer approvals at OEMs and Tier1 customers
- Deep design collaboration with all major OEMs and Tier1s
- 900 SBU professionals serving our customers globally

# AUTOMOTIVE COMPONENTS BUSINESS

## GLOBAL FOOTPRINT

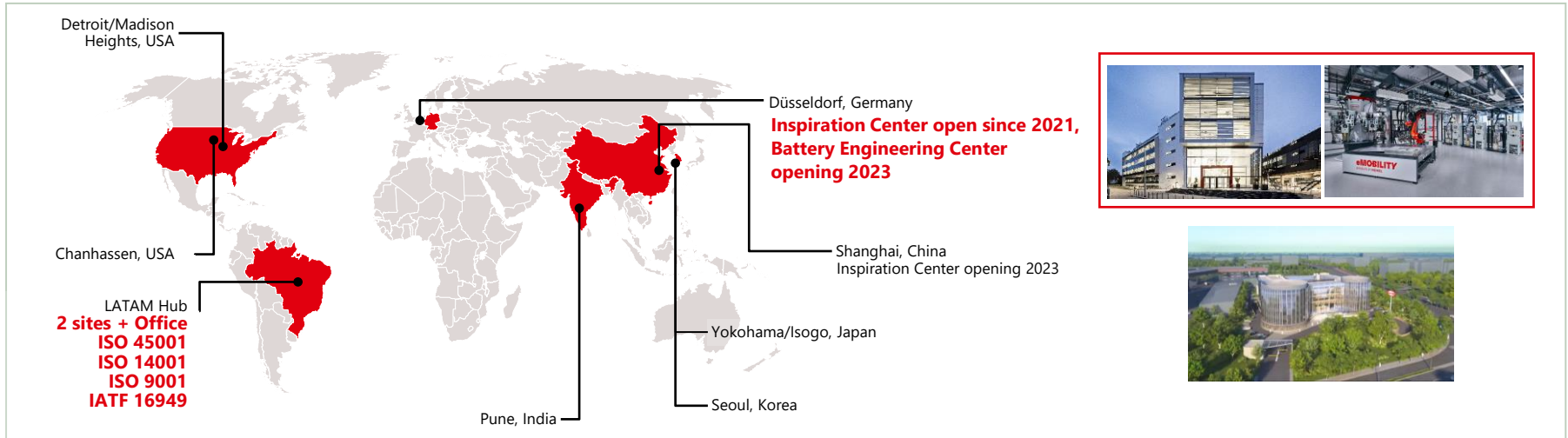
8 Innovation Hubs  
Automotive Expertise

~200 Scientists  
Multi-Technologies

~100 Thermal & Battery Solutions Experts

~400\* Patents  
Automotive Applications

+200M€ Invest  
Inspiration Centers  
Düsseldorf/Shanghai



\* Active patent families



# AUTOMOTIVE COMPONENTS BUSINESS

## ***PIONEER IN OFFERING SUSTAINABLE SOLUTIONS***

### CLIMATE



- Support customers to materialize their **climate targets**
- Reduce customers' **environmental footprint in operation**

### CIRCULARITY



- Support customers to achieve their **bio-based & recycled** targets
- Enable customers to claim **recyclability & circularity** through debonding & **design for sustainability**

### SAFETY



- Offer customers **enhanced health & safety products** in production, application and use phase

### TRANSPARENCY



- Provide customers **data transparency about the sustainability benefits** of our solutions incl. the use phase.

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# HOW HENKEL IS SHAPING THE CAR OF THE FUTURE

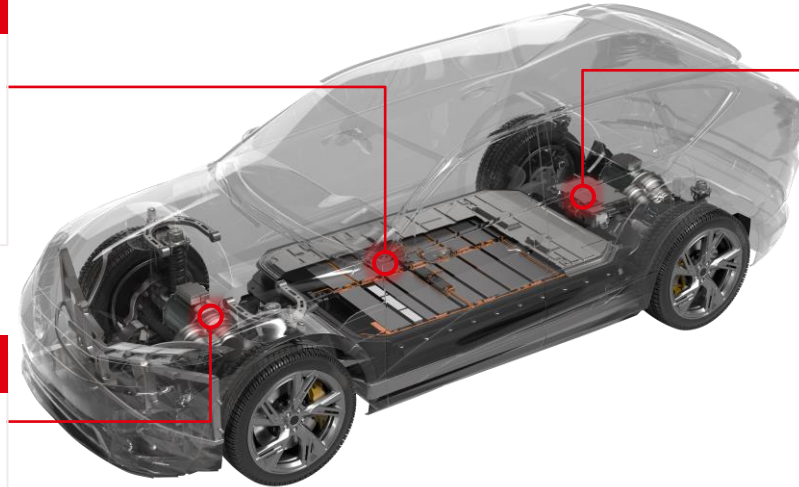
## Electrification and new designs require new technology solutions

### Battery Systems

- Gap Fillers
- Thermally Conductive Adhesives
- Functional Coatings
- Thermal Propagation Prevention
- Structural Bonding Adhesives
- Assembly Adhesives
- Gasketing and Sealing

### E-Drive Systems

- Potting and Thermal Potting
- Magnet Bonding
- Impregnation Service
- Gasketing and Sealing



### Power Conversion Systems

- Gap Fillers
- Gap Pads
- Thermal Potting
- Gasketing and Sealing



# EV TRENDS DRIVING HENKEL'S INNOVATION ROADMAP

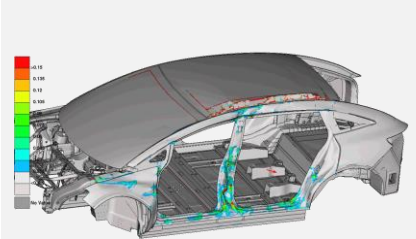
## POWER / FAST CHARGING & INCREASE IN DRIVING RANGE



### New Battery Technologies

Developing new applications for next generation battery types (Hi-Ni, LFP, Si anode, Solid-State-Battery)

## PASSENGER SAFETY



### Lightweight & Integrated Designs

Driving innovation enabling C2P / C2C designs & addressing light weight requirements

## PASSENGER SAFETY



### Thermal Propagation Prevention

Extending the evacuation time for passengers in case of "battery fire" emergency

## SUSTAINABILITY & CIRCULAR ECONOMY

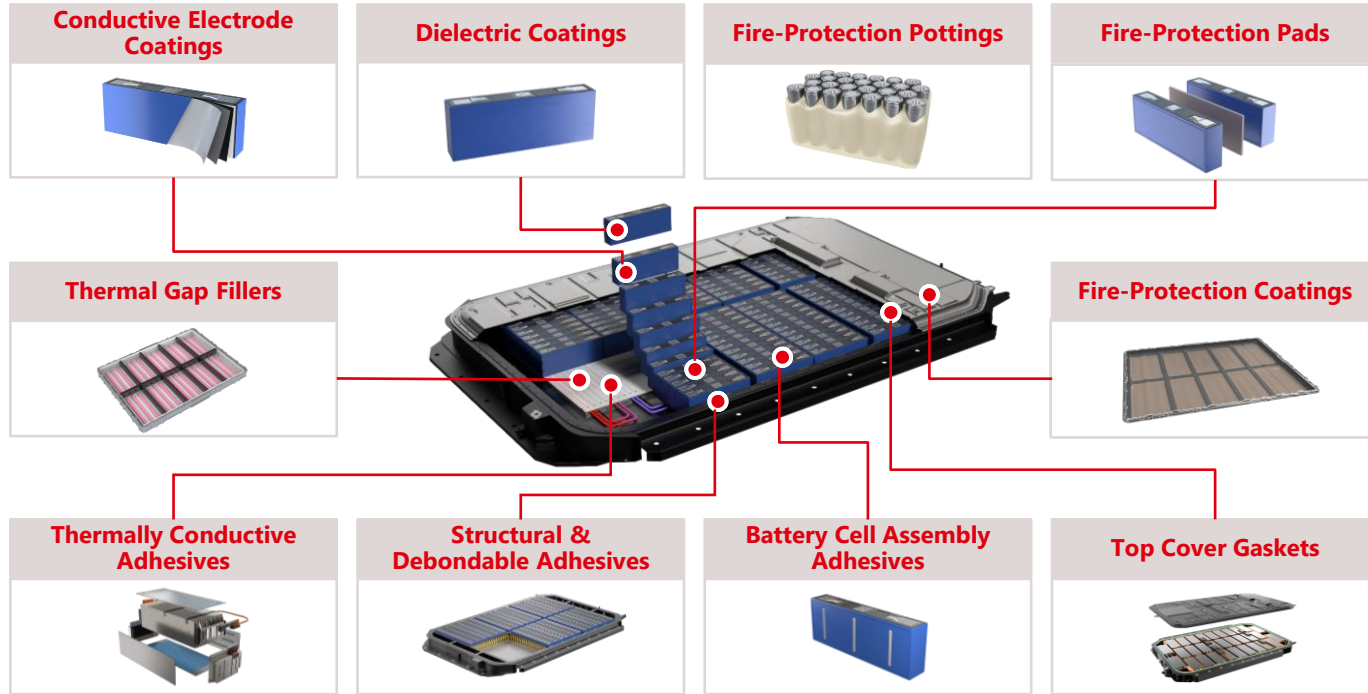


### Battery Re-use & Recycling

Enabling 4R: repair, refurbish, repurpose & recycle

# HENKEL E-MOBILITY SOLUTIONS

## KEY TECHNOLOGIES FOR BATTERY SYSTEMS



APPLICABLE TO VARIOUS  
BATTERY TYPES

Pouch



Cylindrical

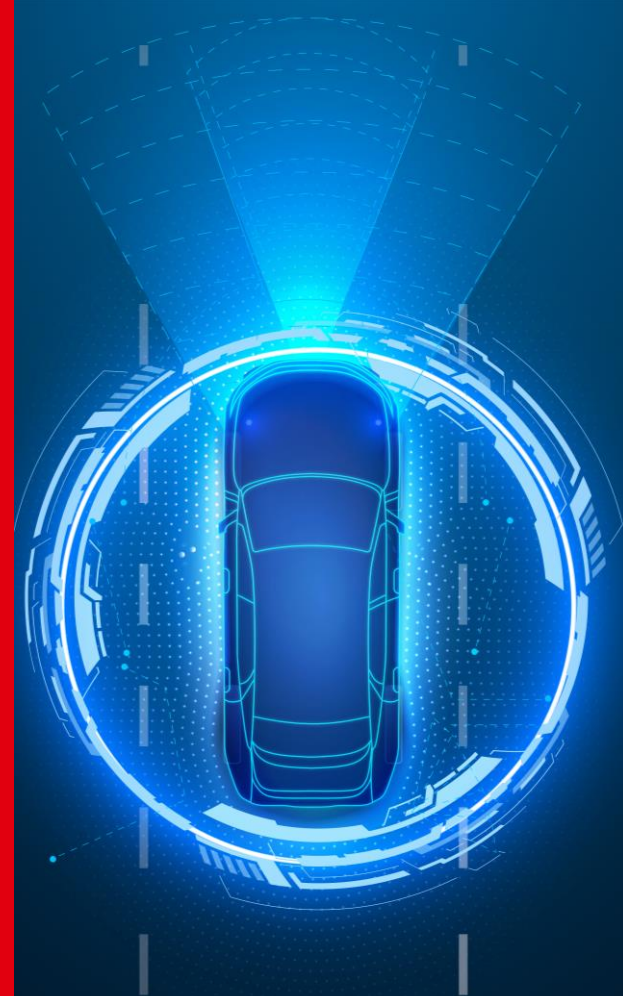


Prismatic



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# LATAM REGIONAL NEEDS DRIVING HENKEL'S INNOVATION

**TECHNOMELT®**

## SOLUÇÃO HOTMELT PARA BATERIAS DE CHUMBO-ÁCIDO

Use o **TECHNOMELT® AS 4350** e aproveite os benefícios dessa solução:



Redução de custos



Redução do consumo de energia



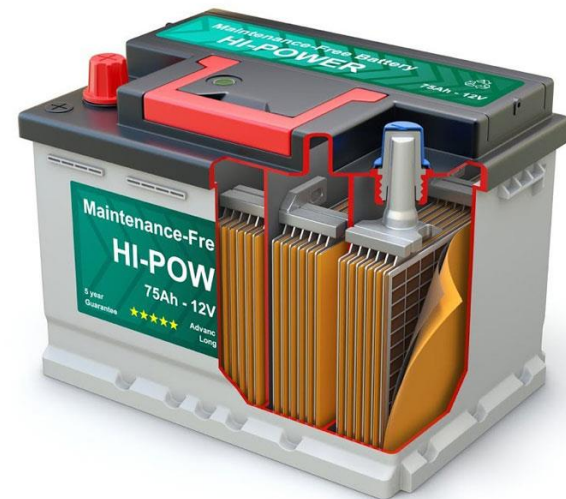
30% menos produto aplicado



Menos manutenção no equipamento



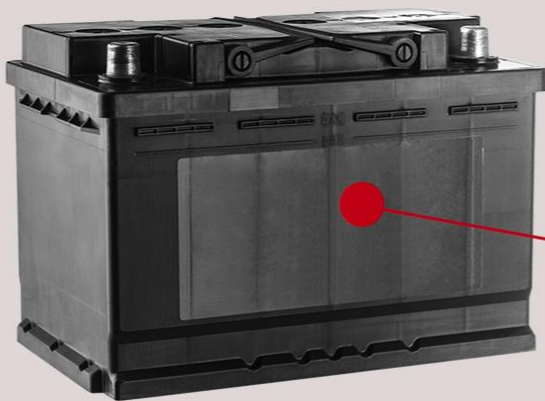
Aumento da produtividade



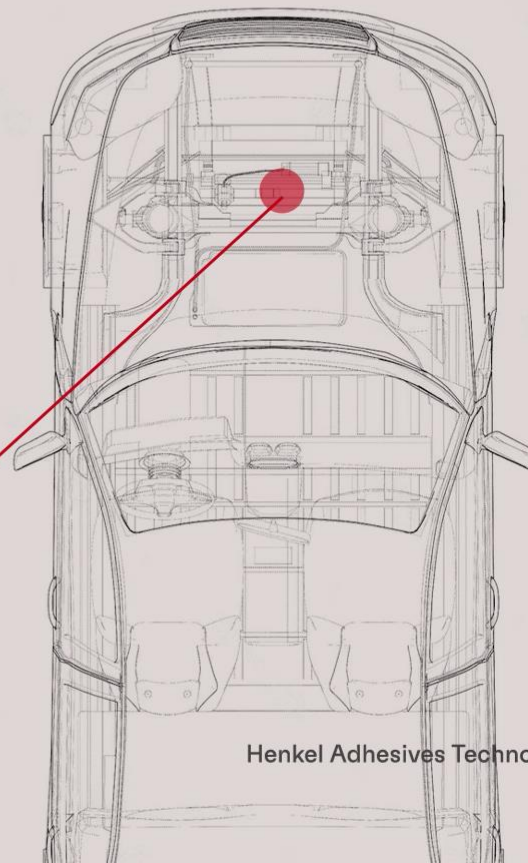
**TECHNOMELT®**

# **TECHNOMELT® AS 4350**

A nova **solução hotmelt**  
da Henkel para baterias.



**Henkel**



Henkel Adhesives Technology



# REDUZA O CONSUMO DE ENERGIA E AUMENTE A PRODUTIVIDADE

O **TECHNOMELT® AS 4350** é uma solução hotmelt desenvolvida para a união/fixação das placas internas, evitando a descontinuidade no valor da corrente elétrica, quedas de tensão elétrica e curtos-circuitos.

Esse lançamento permite a aplicação em **baixas temperaturas** (150°C a 200°C) , **economizando energia** e gerando a necessidade de **menos manutenção** no conjunto (coleiro, mangueira e bico). Além disso, o **uso de adesivo** por bateria pode ser até **30% menor**, se comparado com outros produtos do mercado.

## CARACTERÍSTICAS

- Excelente resistência mecânica e química
- Alto alongamento
- Excelente estabilidade térmica
- Resistente ao ácido sulfúrico
- Ótima adesão ao polipropileno (PP)
- Aprovado na norma ABNT NBR 15940:2019 (ensaio de vibração)
- Resistência de até 20h no ensaio de vibração
- Aplicado em baterias de veículos leves, pesados e agrícolas

# TECHNOMELT<sup>®</sup> AS 4350

## Homologação Norma ABNT NBR 15940:2019

Tabela 2 Análise geral dos resultados.

Critério de aceitação (ABNT NBR 15940:2019 Item 8.6)	Análise do resultado
A tensão entre os terminais da bateria após 60 segundos de descarga realizada antes do movimento vibracional deve ser maior ou igual a 7,2 V	$U_{60s}: (11,008 \pm 0,005) V$ > 7,2 V
Não ocorrer descontinuidade no valor da corrente elétrica de descarga maior que 1 % do valor aplicado	Não houve descontinuidade
Não ocorrer queda de tensão elétrica igual ou superior a 2 V em relação ao valor da tensão medida no início do ensaio e a circuito aberto em três leituras consecutivas	Não houve queda de tensão
Durante a realização do ensaio, não pode haver vazamento de eletrólito	Não houve vazamento de eletrólito
A tensão entre os terminais da bateria após 60 segundos de descarga realizada após o movimento vibracional deve ser maior ou igual a 7,2 V	$U_{60s}: (10,982 \pm 0,005) V$ > 7,2 V

**Aprovado (Ciclo de até 20 horas)**

# TECHNOMELT® AS 4350

Homologação Norma ABNT NBR 15940:2019

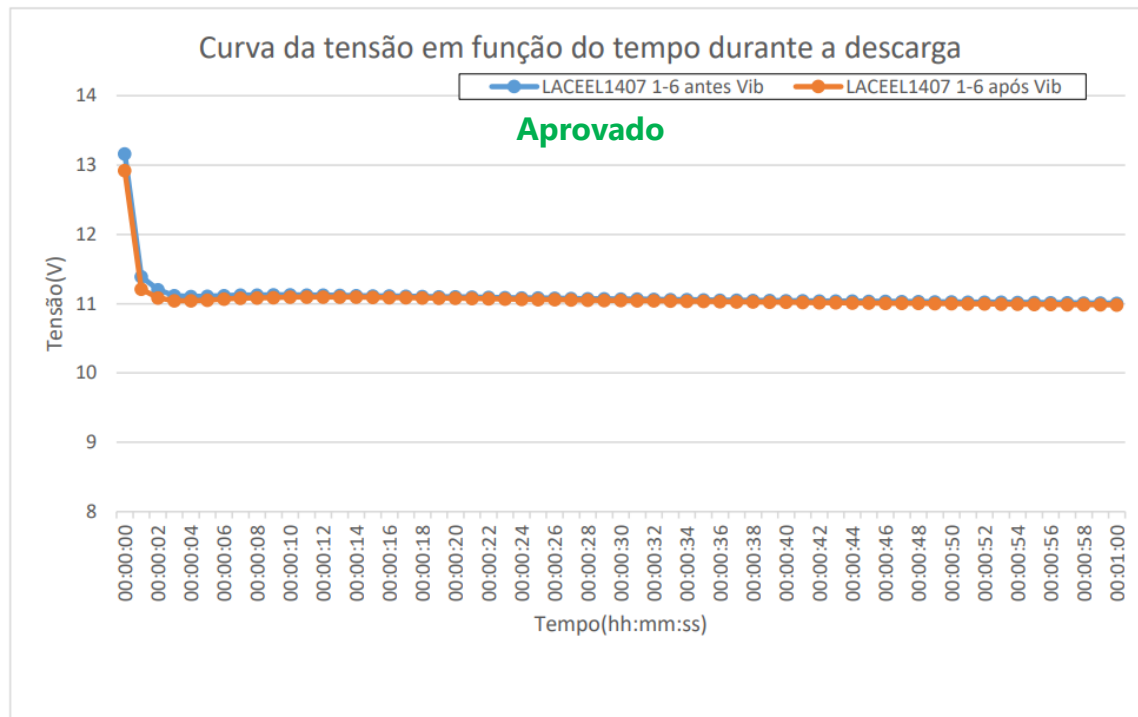


Figura 3 Curva da Tensão em função do tempo, durante a descarga (60%CCA).



FIND OUT MORE ON [HENKEL-ADHESIVES.COM](https://www.henkel-adhesives.com)