

MICHELIN

RESICARE

Beyond resin, innovation for life.




BUILDING &
CONSTRUCTION

Resi4 INSULATION

A unique, non-toxic¹ & renewable-carbon-based araminolic resin engineered for insulation applications and meeting ACERMI criterias.

Natural & mineral fiber based insulation panels



Resi4 INSULATION

Araminolic resins provide a sustainable alternative to conventional thermosetting phenolics, formulated with unique, bio-based monomers that replace **formaldehyde** with **aromatic aldehydes** and **polyphenols**.

Resi4 INSULATION is a unique, araminolic resin for **mineral and natural insulation**, whether **glass fiber, rock fiber** or **wood fiber**, for both **flexible and rigid panels**. These resins are designed to be non-toxic, SVHC-free¹ and 100% bio-sourced, making them particularly well-suited to the needs of construction and energy renovation. It is a new alternative to historical **formo-phenolic resins** and **isocyanate resins**.

Benefits and characteristics



Requested ACERMI performances for your construction industry are achieved

Compatible with water-based cleaning systems

Compressive strength (10%)³ = [50 to 70] kPa

Tensile strength³ = [10 to 16] kPa

Water absorption³ < 1 kg/m²



Solving toxicity issues in PUF / PMDI solutions for your workers & offering regulatory peace of mind

REACH compliant

Monomers **free of formaldehyde and isocyanates** by design

Free of CMR 1 & 2 and endocrine disruptors

Water-based resin



Supports your company's sustainable development strategy and green building certification

Approaching 100% bio-based formulation²

Bio-based raw materials: **5HMF monomer**

Aligned with RE2020

Low CO₂ emissions²

Advantages

✓ **No acute toxicity & serious health hazard pictograms VS Formaldehyde, Phenol, Furfuraldehyde.**



Acute toxicity



Serious health hazard



Resi4 INSULATION
CO₂ emissions² (CO₂kg / kg)



(1) Formulated without chemicals meeting SVHC criteria (Substance of Very High Concern) as defined by European Chemicals Agency in date of 01/01/2026.

(2) Upon availability of our sugar-based monomers industrial demonstrators in 2027. Two of our first main industrial monomers demonstrators are based in France. The bio-based content is based on ISO 16620 guidelines based on internal data. CO₂ emission's preliminary figures are based on internal data, compliant with ISO 14044 guidelines. The variability of high and low values is depending of sugar sourcing.

(3) For panel density of 120 kg/m³.

Technical Data Sheet

Product: Resi4 INSULATION.

Description: Aqueous araminolic resin.

Presentation form: Brown-orange liquid.

Benefits: Formaldehyde-free, phenol-free formulation, compatible with additives commonly used by industry professionals.

Key Physico-Chemical Properties of the Application:

- Flexion, compression, spring back, etc.
- Moisture resistance
- Conductivity

Main application: mineral fiber insulation, 40 to 200 mm thick, 30 to 100 kg/m³.

Main processing method: spraying, thermo-compression.

Usage and storage duration: : 30 days at 20°C up to 700 cP. > 3 months at 5°C. Store between 1 and 25°C.

Handling precautions: This product must be used in accordance with the instructions in the Safety Data Sheet.

Characteristics of liquid resin:

Property	Method	Unit	Measure
Viscosity at 20°C	Brookfield Rheometer	mPa.s	150 - 700
Dry matter	Mettler Thermobalance	%	Up to 55
pH	Mettler pH meter	-	7 - 9
Curing temperature	High-pressure DSC and oven	°C	80 - 225
Usage duration at 23°C	Viscosity monitoring	Days	30 up to 700 cP

Recommendations and precautions:

- The following characteristics are adaptable: viscosity, pH and reactivity.
- It is possible to heat the solution (< 40°C) to reach the target spraying viscosity.
- Perform preliminary spraying tests with the existing spraying process.
- It is not recommended to mix with acidic compounds, oxidizing compounds, or reducing compounds.
- Could be stirred before use.

Destruction and disposal: Disposal with water-based solutions.

Additional information: For further information, please reach out to us through the contact form on our website (<https://resicare.michelin.com/contact/>).

The information presented in this document, intended for explanatory purposes only, is based on our technical and scientific knowledge and on the literature available at the date of publication. None of the information contained herein should be construed as a warranty or representation by the manufacturer, nor as an infringement of existing patents. The manufacturer accepts no responsibility for the information provided.

Did you know? REACH regulation focus

I've heard about the REACH regulation...
Should I really worry about it? Does it impact my business?

Yes! Regarding the European directive 2004/37/EC, employers must reduce the use of CMR substances in the workplace. This must be done by replacing the hazardous substance with a safer alternative, if technically feasible!

Got it... Time to improve our chemistry
for a safer future!

Sent by Pioneer customer

MICHELIN RESICARE

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