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FUTURE OF SHAPING

NiProFoam™
TECHNICAL DATA SHEET

NiProFoam™ is a nickel-coated, open-cell polyurethane hybrid foam with an adjustable cell structure (PPI) and variable coating thickness. The metallic reinforcement of the PU foam geometry creates a lightweight, mechanically robust, and thermally stable functional material. The combination of high porosity, a defined nickel coating, and reproducible properties makes NiProFoam™ suitable for a wide range of applications, including energy absorption, filtration, shielding, and structural lightweight applications.

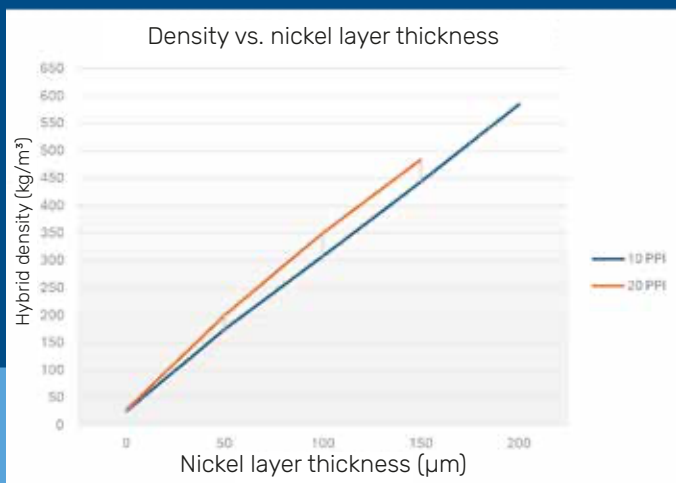
DENSITY

10 ppi

20 ppi

Coating Thickness (μm)	Density (kg/m^3)
0	25.50
50	174.80
100	307.60
150	443.60
200	584.80

Coating Thickness (μm)	Density (kg/m^3)
0	28.00
50	200.40
100	350.00
150	484.00



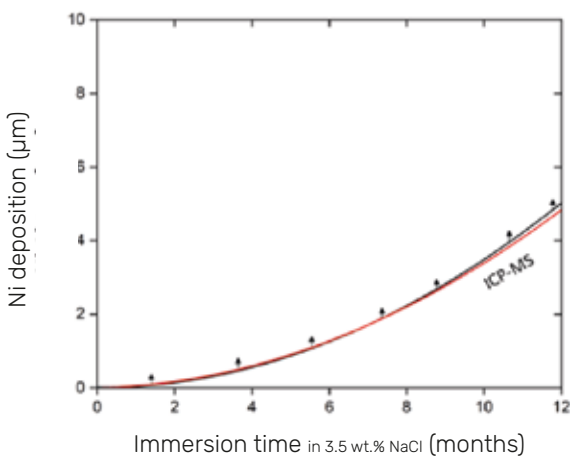
QUASI-STATIC MECHANICAL PROPERTIES

10 ppi

Coating Thickness (μm)	Stiffness (Pa)
50	4.17-22.89
100	29.44-100.02
150	50.89-169.55
200	38.98-304.05

20 ppi

Coating Thickness (μm)	Stiffness (Pa)
50	6.20-30.64
100	42.06-184.45
150	106.76-298.10



Plateau Stress (MPa)	Plastic Collapse Stress (MPa)	Energy Absorption 50 % Compression (J/cm ³)
0.13-0.27	0.15-0.35	0.07-0.10
0.68-1.81	1.10-2.24	0.38-0.64
1.45-2.99	2.23-3.84	0.70-1.03
2.19-4.70	2.99-7.17	1.29-1.96

Plateau Stress (MPa)	Plastic Collapse Stress (MPa)	Energy Absorption 50 % Compression (J/cm ³)
0.15-0.49	0.19-0.36	0.08-0.13
1.06-1.58	1.52-2.83	0.60-0.87
2.24-4.17	4.55-7.03	1.56-2.16

FRACTURE BEHAVIOUR

Ductile strut bending / buckling, fragment-free

OPERATING TEMPERATURE

Recommended operating temperature range (Ni-PU hybrid foam)

CONTINUOUS OPERATION

-40 °C to +150 °C

SHORT-TERM EXPOSURE

+150 °C to +300 °C



GENERAL NOTES AND ADDITIONAL INFORMATION

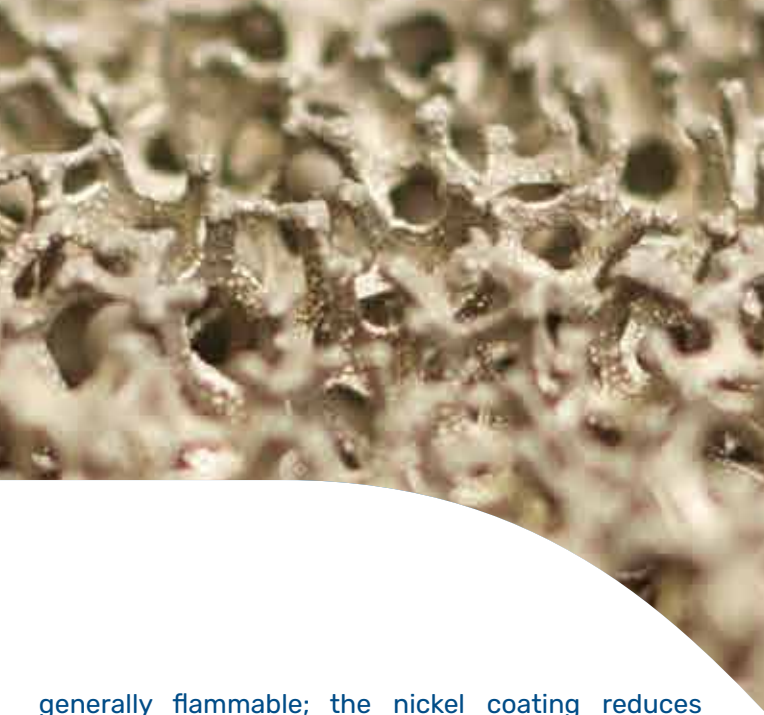
The technical data contained in this data sheet are based on our current knowledge and experience. They are provided for general information purposes only and do not constitute guaranteed properties in the legal sense. The user is responsible for independently verifying the suitability of the material for the intended application. Changes due to ongoing product development remain reserved.

TEST CONDITIONS

Unless otherwise specified, all mechanical properties were determined under standard conditions (room temperature 20–23 °C, quasi-static compressive loading up to 50 % compression). Deviations due to manufacturing tolerances, ageing, or environmental conditions are possible.

SAFETY & ENVIRONMENTAL INFORMATION

During processing (e.g., grinding, cutting), nickel dust may be generated. According to TRGS 900 and EU Directive 2004/37/EC, these are classified as potentially sensitizing. Appropriate protective equipment (respiratory protection, extraction systems) is required. Polyurethane components are



generally flammable; the nickel coating reduces flammability but does not replace a formal flame-retardant classification. Nickel-containing materials can be recycled as metal recycling material. Disposal must comply with national regulations.

STORAGE & PROCESSING

Store in a dry, dust-free and corrosion-protected environment at ambient temperature. Avoid direct moisture, aggressive media, or alkaline environments. Thermal post-treatment, soldering or sintering is recommended only under protective gas to prevent oxidation of the nickel surface.

DISCLAIMER

This document has been prepared with the greatest possible care. However, no liability is assumed for the completeness, accuracy, or applicability of the information. All data are subject to technical changes in the course of product development. Further technical information, safety data sheets, or test results are available upon request.