



Checkerspot® Rigid PU Foam Systems



Checkerspot's rigid polyurethane foam systems are designed with both performance and sustainability in mind. Made from renewable algae oil, Checkerspot® Rigid PU Foam enables customers to replace petroleum-based incumbent materials with a high-quality, biobased alternative.

HIGHLY TUNABLE

- Cure Profile: tack free time 3–9 mins
- Foam density: 32–521 kg/m³ (2–33 lbs/ft³) at current formulations, with ability to explore even higher densities.
- Insulation: R values 3+.

SAFETY AND SUSTAINABILITY

- High biobased content – current formulations can reach up to 41% (ASTM D6866).
- No mercury, tin, MOCA or TDI.
- Uses water as a blowing agent – no cyclopentane, n-pentane, methyl formate or hydrofluorocarbons.

DESIGN FREEDOM

- Foam systems are suitable for both molding and free rise production, conforming to a variety of shapes.
- Rigid foam boards are easy to cut and carve.

PRODUCTION BENEFITS

- Uses water as a blowing agent.
- High Thermal Stability, estimated at ~174°C based on internal thermogravimetric analysis (TGA) – suitable for high temperature product layup or composite manufacturing.
- Adheres directly to wood, potentially eliminating the need for adhesives.

EXAMPLE APPLICATIONS

- Core material for outdoor recreation hard goods: alpine and backcountry skis and snowboards, water skis, paddles, hydrofoils, and more.
- Core material for composites in automotive and construction industries.

For questions or quotes

Please send inquiries to materials@checkerspot.com



Certified



This company meets high standards of social and environmental impact.

Corporation

Checkerspot is a biotechnology company that designs high performance ingredients and materials for a better planet. Our Wing® Platform enables our biology and design labs to develop, test, and commercialize award-winning products that aim to reduce global dependence on fossil fuels and other unsustainable sources of oil. We seek to accelerate the adoption of renewable, biobased products that engage directly with consumers and show what is possible in industrial materials, outdoor recreation, personal care, and food and nutrition.

NOVEMBER 2023

1250 Marina Village Parkway, Alameda, CA 94501

checkerspot.com



SCAN TO VIEW
DIGITAL VERSION

Checkerspot® Rigid PU Foam 1094

FPU-1070-094
November 2023

Mid-Density Rigid Foam (111 kg/m³)



KEY PROPERTIES

- Excellent physical properties & machinability
- High biobased content by ASTM D6866
- No mercury, tin, MOCA, or TDI



APPLICATIONS

- Board cores for snow and water sports

Liquid Component Properties		Resin (Isocyanate)	Hardener (Polyol)
Mix Ratio	pbw	123.59	100.00
	pbv	101.58	100.00
Density	g/cm ³	1.23	1.01
Viscosity at 72°F (22°C)	cP	190.00	2,159.96

Reactivity Profile Properties	Mix Time	Cream Time	Gel Time	Tack Free Time	End of Rise
FPU 1070-001	45 sec	20 sec	1 min 33 sec	5 min 17 sec	4 min 18 sec

Rigid Foam Properties (Free Rise)

Density	kg/m ³	110.8
	lb/ft ³	6.9
Compressive Strength at 10% Deflection	KPa	925.8
	psi	134.3
Compressive Strength at 50% Deflection	KPa	947.7
	psi	137.5
Biobased Content	%	42



STORAGE

Material should be stored in original, tightly sealed containers between 65–90°F (18–32°C). Avoid moisture and high humidity. Partially used containers should be tightly resealed and used as soon as possible. Dispose of used containers appropriately.



HANDLING PRECAUTIONS

Ensure that the workspace is well ventilated during processing of material and follow best industrial hygiene practices including wearing of safety goggles, gloves, and laboratory coat.

Packaging (Approximate Weight)

Container Size	1 Quart Kit	1 Gallon Jug	5 Gallon Bucket	55 Gallon Drum	275 Gallon Tote
Total Weight	2.12 kg	8.49 kg	24.95 kg	274.50 kg	1,372.49 kg
Approx. Volume	0.5 Gallons	2 Gallons	10 Gallons	110 Gallons	550 Gallons

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