



**MENGWEI**  
ADVANCED MATERIALS

01

— DIVISION 01

# Rigid Foam Polyurethane Systems

COMBINATION SYSTEMS · POLYETHER & POLYESTER  
POLYOLS · ISOCYANATES

- 01 Rigid Foam PU Systems
- 02 Flexible & Specialty Polyols
- 03 PU Waterproofing & Grouting
- 04 Polyurea Spray Systems
- 05 MS Polymer & Sealants
- 06 PU Additives & Catalysts
- 07 Specialty Surfactants & Industrial Chemicals

*Engineered to global specifications — one-stop  
polyurethane raw materials & systems.*

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MENGWEI rigid polyurethane systems deliver low thermal conductivity, high compressive strength and excellent dimensional stability. Formulated combination systems (B-component + matched polymeric MDI) are organised by application — sandwich panel (continuous & discontinuous), home appliance, water heater, block, pipe insulation, pipe support and spray — and supported by rigid polyether and polyester base polyols, isocyanates and flame retardants. All HCFC-141b grades have been withdrawn; the range is built on water-blown, hydrocarbon (pentane) and low-GWP LBA (HFO) technologies.

### Application-matched

Grouped by end use: panel, appliance, water heater, block, pipe and spray — each with its own grade.

### 141b-free / low-GWP

Built on water-blown, pentane (HC) and LBA (HFO) systems; HCFC-141b fully withdrawn.

### One-stop supply

Polyol blend + isocyanate + flame retardant + additives from a single source.

## Rigid Foam Combination Systems

MwFoam

Ready-formulated polyol blends (B-component) matched with MENGWEI polymeric MDI, grouped by application and blowing agent. Specify continuous-line or discontinuous/press for panel grades.

HCFC-141b grades have been withdrawn (ozone-depleting, phased out). The range now features **water-blown, pentane (HC)** and **LBA (HFO, low-GWP)** systems, alongside HFC-245fa / 365mfc where specified. Panel grades are tuned for either a **continuous lamination line** or a **discontinuous press** — please state your line type.

| SUB-SYSTEM / APPLICATION | GRADE       | BLOWING AGENT | MIX RATIO A:B | FREE-RISE (KG/M <sup>3</sup> ) | MOULDED (KG/M <sup>3</sup> ) | COMPRESSIVE (KPA) | Λ (MW/M·K) |
|--------------------------|-------------|---------------|---------------|--------------------------------|------------------------------|-------------------|------------|
| Panel (discont.)         | MwFoam-PD10 | Water         | 1 : 1.3–1.6   | 28–32                          | ≥45                          | ≥140              | ≤28        |
| Panel (discont.)         | MwFoam-PD11 | Pentane       | 1 : 1.1–1.3   | 23–26                          | ≥40                          | ≥140              | ≤24        |
| Panel (discont.)         | MwFoam-PD12 | HFC-245fa     | 1 : 1.1–1.3   | 25–28                          | ≥40                          | ≥140              | ≤24        |
| Panel (discont.)         | MwFoam-PD13 | HFC-365mfc    | 1 : 1.1–1.3   | 25–28                          | ≥40                          | ≥140              | ≤24        |
| Panel (discont.)         | MwFoam-PD14 | LBA (HFO)     | 1 : 1.1–1.3   | 25–28                          | ≥40                          | ≥140              | ≤24        |
| Panel (cont.)            | MwFoam-PC10 | Water         | 1 : 1.4–1.6   | 15–18                          | ≥28                          | ≥80               | —          |
| Panel (cont., B3)        | MwFoam-PC11 | Pentane       | 1 : 1.2–1.4   | 30–35                          | ≥36                          | ≥150              | ≤22        |
| Panel (cont., B2/PIR)    | MwFoam-PC12 | Pentane       | 1 : 1.5–1.7   | 33–38                          | ≥40                          | ≥150              | ≤22        |
| Home appliance           | MwFoam-HA10 | Water         | 1 : 1.3–1.5   | 28–32                          | ≥45                          | ≥140              | ≤24        |
| Home appliance           | MwFoam-HA11 | Pentane       | 1 : 1.1–1.3   | 24–26                          | ≥40                          | ≥150              | 19–20      |



| SUB-SYSTEM / APPLICATION | GRADE        | BLOWING AGENT | MIX RATIO A:B | FREE-RISE (KG/M <sup>3</sup> ) | MOULDED (KG/M <sup>3</sup> ) | COMPRESSIVE (KPA) | Λ (MW/M·K) |
|--------------------------|--------------|---------------|---------------|--------------------------------|------------------------------|-------------------|------------|
| Home appliance           | MwFoam-HA12  | HFC-245fa     | 1 : 1.1–1.3   | 22–24                          | ≥38                          | ≥130              | 18–19      |
| Home appliance           | MwFoam-HA14  | LBA (HFO)     | 1 : 1.1–1.3   | 22–24                          | ≥36                          | ≥120              | 17–18      |
| Water heater / solar     | MwFoam-WH11  | Pentane       | 1 : 1.0–1.2   | 28–32                          | ≥45                          | ≥140              | 19–20      |
| Water heater / solar     | MwFoam-WH12  | HFC-245fa     | 1 : 1.0–1.2   | 28–30                          | ≥42                          | ≥130              | 18–19      |
| Block foam               | MwFoam-BK12  | HFC-245fa     | 1 : 1.1–1.3   | 25–30                          | ≥40                          | ≥140              | ≤22        |
| Block foam (cont.)       | MwFoam-BK12C | HFC-245fa     | 1 : 1.4–1.7   | 38–43                          | 43–47                        | ≥160              | ≤22        |
| Pipe insulation          | MwFoam-PI10  | Water         | 1 : 1.5–1.7   | 30–35                          | ≥70                          | ≥300              | ≤28        |
| Pipe insulation          | MwFoam-PI11  | Pentane       | 1 : 1.1–1.3   | 15–30                          | ≥60                          | ≥300              | ≤28        |
| Pipe support             | MwFoam-PS10  | Water         | 1 : 1.0–1.2   | 60–500                         | 100–500                      | —                 | —          |
| Spray (open-cell)        | MwFoam-SP10  | Water         | 1 : 1.0       | 9–10                           | —                            | —                 | —          |
| Spray (closed-cell)      | MwFoam-SP12  | HFC-245fa     | 1 : 1.0       | 28–35                          | ≥38                          | ≥200              | ≤24        |
| Spray (closed-cell)      | MwFoam-SP13  | HFC-365mfc    | 1 : 1.0       | 28–35                          | ≥38                          | ≥200              | ≤24        |
| Packaging                | MwFoam-OT10  | Water         | 1 : 1.0       | 9–15                           | —                            | —                 | —          |
| EPS / rock-wool adhesive | MwFoam-OT11  | Water         | 1 : 0.5–1.0   | 25–50                          | —                            | —                 | —          |
| Wood imitation           | MwFoam-OT20  | Water         | 1 : 1.0–1.2   | —                              | ≥60                          | ≥100              | —          |

## Rigid Polyether Polyols

**MwEol-R**

High-functionality base polyols for rigid systems and refrigeration — sucrose / sorbitol and amine-initiated grades.

| GRADE      | OH VALUE (MGKOH/G) | VISCOSITY 25°C (MPA·S) | CHARACTERISTICS                          | TYPICAL APPLICATION      |
|------------|--------------------|------------------------|------------------------------------------|--------------------------|
| MwEol-R380 | 365–395            | 6 500–11 500           | High dimensional stability, fast demould | Refrigerators & freezers |
| MwEol-R375 | 365–395            | 2 000–3 000            | Low viscosity                            | Conventional rigid foam  |



| GRADE             | OH VALUE (MGKOH/G) | VISCOSITY 25°C (MPA·S) | CHARACTERISTICS                          | TYPICAL APPLICATION            |
|-------------------|--------------------|------------------------|------------------------------------------|--------------------------------|
| <b>MwEol-R395</b> | 385–405            | 6 000–10 000           | General purpose                          | Conventional rigid foam        |
| <b>MwEol-R430</b> | 410–450            | 4 000–7 000            | General purpose                          | Conventional rigid foam        |
| <b>MwEol-R450</b> | 430–470            | 7 000–9 000            | General purpose                          | Conventional rigid foam        |
| <b>MwEol-R455</b> | 440–470            | 13 500–17 500          | High cross-link density                  | Conventional rigid foam        |
| <b>MwEol-R490</b> | 470–510            | 30 000–45 000          | High functionality (sorbitol)            | High-strength rigid foam       |
| <b>MwEol-RA77</b> | 735–805            | 2 000–3 000 (50°C)     | Amine-initiated, very high functionality | Rigid co-polyol / cross-linker |
| <b>MwEol-RA45</b> | 420–480            | 3 000–5 000            | Amine-initiated, fast cure               | Rigid foam, spray              |
| <b>MwEol-RA40</b> | 380–420            | 8 000–10 000           | Amine-initiated, high functionality      | Rigid foam, panel              |

## Rigid Polyester Polyols

MwEol-RP

Aromatic / aliphatic polyester polyols for rigid foam — improve flame retardancy, strength and cell structure.

| GRADE               | OH VALUE (MGKOH/G) | VISCOSITY 25°C (MPA·S) | CHARACTERISTICS / ADVANTAGE                          |
|---------------------|--------------------|------------------------|------------------------------------------------------|
| <b>MwEol-RP315</b>  | 315                | 2 750                  | Finer foam cells, lower thermal conductivity         |
| <b>MwEol-RP240</b>  | 240                | 3 250                  | Higher strength & dimensional stability, improved FR |
| <b>MwEol-RP240U</b> | 240                | 11 000                 | Undiluted high-strength grade, improved FR           |
| <b>MwEol-RP235</b>  | 240                | 3 250                  | Improved pentane compatibility, finer cells          |
| <b>MwEol-RP275</b>  | 275                | 6 500                  | Improved flame retardancy, lower $\lambda$           |
| <b>MwEol-RP175</b>  | 175                | 10 000                 | Improved substrate adhesion & strength               |

## Flame Retardants

MwFR

Liquid phosphate-ester flame retardants for rigid foam systems.

| GRADE          | TYPE                                    | P CONTENT (%) | CL CONTENT (%) | NOTES                                                |
|----------------|-----------------------------------------|---------------|----------------|------------------------------------------------------|
| <b>MwFR-C1</b> | Chlorinated phosphate ester (TCPP type) | 9.4           | 32.5           | Low viscosity (~65 mPa·s); general rigid foam FR     |
| <b>MwFR-P1</b> | Halogen-free phosphate ester (TEP type) | 17            | —              | Low viscosity; halogen-free, also a reactive diluent |

## Isocyanates

MwIso

Matched isocyanates — TDI, polymeric MDI, pure & liquid MDI and IPDI.

| GRADE            | TYPE      | NCO CONTENT (%) | VISCOSITY 25°C (MPA·S) | APPLICATION |
|------------------|-----------|-----------------|------------------------|-------------|
| <b>MwIso-T80</b> | TDI 80/20 | 48.2            | 3.2                    |             |



| GRADE      | TYPE                               | NCO CONTENT (%) | VISCOSITY 25°C (MPA·S) | APPLICATION                                         |
|------------|------------------------------------|-----------------|------------------------|-----------------------------------------------------|
|            |                                    |                 |                        | Flexible foam (Div. 02), elastomers, coatings       |
| MwIso-T100 | TDI 100                            | 48.2            | 3.2                    | Flexible foam, elastomers                           |
| MwIso-MD20 | Polymeric MDI (low functionality)  | 30–32           | 100–300                | Rigid / semi-rigid / HR foam, adhesives             |
| MwIso-MD40 | Polymeric MDI (high functionality) | 30–32           | 350–700                | Rigid & PIR foam systems                            |
| MwIso-PIR  | Polymeric MDI (high-F, for FR PIR) | ≥29             | 480–640                | High-FR continuous PIR panel                        |
| MwIso-P50  | Pure MDI (4,4'-MDI)                | 33.5            | —                      | TPU/CPU, sole, self-skinning, elastomers (mp ≤15°C) |
| MwIso-P100 | Pure MDI (flake)                   | 33.5            | —                      | TPU, elastomers, sole (mp 38–39°C)                  |
| MwIso-L26  | Modified liquid MDI                | 26.2            | 200                    | High-/slow-rebound, elastomers, adhesives           |
| MwIso-L29  | Modified liquid MDI                | 29–30           | 25–50                  | Elastomers, adhesives, coatings                     |
| MwIso-IP   | IPDI                               | 37.5            | 10                     | Non-yellowing PU resins, coatings, elastomers       |

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