BAKELITE SYNTHETICS

# Resonance™ Aromatic Polyether Polyols

| Aromatic Polyether Polyols | Viscosity, 25°C (cps) | OH Value (mg/g) | f | % Aromaticity | Benefits |
|---|---|---|---|---|---|
| Resonance™ **PL91-203**<br>(PL91-255- LV version) | 7,000<br>(3,700) | 240<br>(290) | 2.6<br>(2.4) | 33<br>(31) | • Ideal for **Rigid foams** (PUR & PIR)<br>• Provides superior Reaction-to-Fire (RTF) and heat resistance<br>• Improves thermomechanical properties of **elastomers**<br>• Compatible with a variety of polyols, FRs, and blowing agents<br>• Excellent compatibility and shelf life with HFO<br>• In PIR, PL91-205 (pentane & HFO blown) met **ASTM E84 test (FSI:20; SDI: 200),** exceeded the compressive strength, dimensional stability and vapor permeability requirements<br>• In PUR, reduce aliphatic polyetherols, sugar polyols and halogenated Flame Retardants (FR), and the processing temperature<br>• In a model SPF formulation, PL-203 (ca. 20% of B-side): **36% lower pHRR @ 25 kW/m² (Cone Calorimeter)**<br>• Improves hydrolytic resistance<br>• The low viscosity (LV) versions provide enhanced system flow |
| Resonance™ **PL91-205**<br>(PL91-254- LV version) | 12,500<br>(5,500) | 240<br>(300) | 3.0<br>(2.7) | 33<br>(31) | |
| Resonance™ PL91-507 | 3,000 | 175 | 3.0 | 24 | • Suitable for **Rigid, semi-rigid** and **Flexible** foams due to relatively low OH values and high functionality<br>• Particularly suited for **water-blown PUR** foams due to their enhanced water solubility<br>• Replacement of polyetherols results in **finer cell structure** and **improved mechanical** properties in **open-cell spray foams**<br>• Compatible with several common polyols and blowing agents<br>• Improves load-bearing properties due to Rigid hard segment<br>• Enhances processability and hydrolytic resistance |
| Resonance™ PL91-550 | 1,500 | 125 | 3.0 | 17 | |
| Resonance™ PL92-450 | 12,000 | 230 | 3.0 | 31 | • **Secondary** hydroxyl capping leads to slower reactivity<br>• A "drop-in" PUR or PIR formulation achieves better fire ratings<br>• ca. 50% PL92-450/ HFO blown PUR Rigid achieved **Bs2d0 rating**<br>• Helps reduce FRs<br>• Compatible with common FRs, polyols, and blowing agents<br>• Improves processability with wider curing window<br>• Improves hydrolytic resistance |
| Resonance™ PS91-011 | 5,500 | 430 | 2.4 | 38 | • Provides high aromaticity, improved system flow and reduced blending complexity<br>• Offers significant improvements to RTF along with good compressive strength (CS) and dimensional stability (dim. Stability) in PUR and PIR Rigid foams<br>• Improves aged insulation<br>• Reduction in density while maintaining mechanical strength<br>• Compatible with several commonly used polyols and blowing agents such as HFOs<br>• Improves hydrolytic resistance |

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# Resonance™ Novel Aromatic (Triazine) Polyols

| Novel Aromatic Triazine Polyols | Viscosity, 25°C (cps) | OH Value (mg/g) | f | % Aromaticity | Benefits |
|---|---|---|---|---|---|
| Resonance™ **TF94-806** | Flake | 600 | 4.4 | 80 | • **Highly reactive** nitrogen-containing polyol with **FR characteristics** suited for Rigid foams.<br>• Autocatalytic & **non-emissive**, geared for Spray Foams<br>• Compatible with polyols, diluents, and blowing agents<br>• Provides **significant improvements in RTF** by partial replacement of sugar-based or aliphatic polyetherols<br>• Cuts down FRs<br>• Reduces catalysts, particularly volatile amines, thus reducing odor and improving catalytic efficiency<br>• **Reduction in amines** leads to improved **HFO stability** and potentially enhanced shelf life of polyol B-side<br>• Improves compressive strength<br>• TL95-800 is an **aromatic nitrogen-fortified** sucrose polyol that is a direct substitution of any sugar polyol<br>• TL95-600 is a direct substitution of polyetherols (PEP)<br>• TL95-650 is an aromatic nitrogen-fortified PL91-507, particularly suited for water-blown PURs, open and closed cell spray foams<br>• TL91-700 is an aromatic nitrogen-fortified PL91-550, suited more for Flexible and water-blown PURs |
| (TL95-800- 10% in sugar) | (19,200) | (390) | (4.9) | (8) | |
| (TL95-600- 20% in 3f-PEP) | (10,500) | (315) | (3.4) | (16) | |
| (TL95-650- 10% in PL91-507) | (13,570) | (230) | (3.3) | (30) | |
| (TL95-700- 10% in PL91-550) | (6,000) | (190) | (3.4) | (23) | |
| **Novel Aromatic Polyols** | **Viscosity, 25°C (cps)** | **OH Value (mg/g)** | **f** | **% Aromaticity** | **Benefits** |
| Resonance™ **PF94-801** | Flake | 540 | 5.0 | 75 | • Enables faster cure helping with catalyst reduction/optimization<br>• Provides **dimensional stability**, **lower exotherm**, HFO stability<br>• Compatible with common polyols, diluents, FRs and blowing agents<br>• Improves RTF by partial replacement of sugar-based polyols or aliphatic polyetherols (3f-PEP)<br>• Improves aged insulation and compressive strength<br>• Provides excellent chemical and hydrolytic resistance<br>• PL95-801 is a direct replacement for sugar-based polyols<br>• PL95-802 is a direct replacement for aliphatic PEPs |
| (PL95-801- 10% in sugar) | (19,000) | (390) | (5.0) | (7.5) | |
| (PL95-802- 20% in 3f-PEP) | (11,800) | (300) | (3.5) | (15) | |