

Silicone Surfactant Guide

-Polyurethane-



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Ruijiang Group was established in 1999, headquartered in Hangzhou city, China. We created an ISO certified quality control lab in Hangzhou to validate quality and maintain samples on all that we sell. We are one of the top 10 silicone exporters in China and an aggregator of the best quality and sources China has to offer. With 70% of the global Silicon metal, Silicone monomer and silicones and silanes coming from China, we distinguish ourselves from rest.

Hangzhou Ruijiang Chemical Co. Ltd, branded as *RUISIL*, is subsidiary of Ruijiang Group. RUISIL is a technology-based chemical company, focusing on research and application of new silicone material and technology, which provides silicone products & solution to Building & Construction, Cosmetics, Automotive, Agriculture, Textile, Coating & paint, Pharmaceuticals, Adhesives and Sealants, Cleaning Chemicals, etc. Our product line is broad and covers many Silicones. We have grown significantly since our early beginning and continue to add value like Product Liability insurance, Europe & US Company, local inventory, A team that works across the world to bring you answers within 24 hours and tracks and follows your shipments until they reach your door. We work together closely so that you experience seamless customer service!



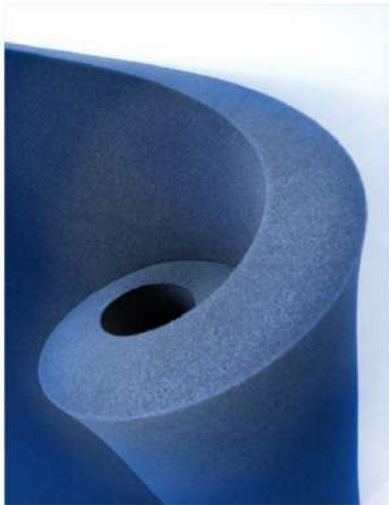
Polyurethane Application



Thermal Insulated Roof Systems
Thermal Insulated Wall Systems
Fire Resistance Roof Systems
Fire Resistance Wall Systems
Cold Storage Systems
...



Thermal Insulated Roof Systems
Thermal Insulated Wall Systems
Industrial Pipe Insulation Systems
...



Furniture Mattresses
Cleaning Sponge
Sofa Cushions
...



Furniture Rebound Mattresses
Car Seat Foam
...

○ **Polyurethane** appeared in the 1930s. After nearly 80 years of technological development, this material has been widely used in the fields of home furnishing, constructions, daily necessities, transportation, and home appliances.

- FR Foam
- VE Foam
- Microcellular PU Foam
- PU Leathers

- Furniture Mattresses | CME
- Memory Mattresses
- Shoe Sole Materials
- Shoe Uppers| Bags | Seat Covers



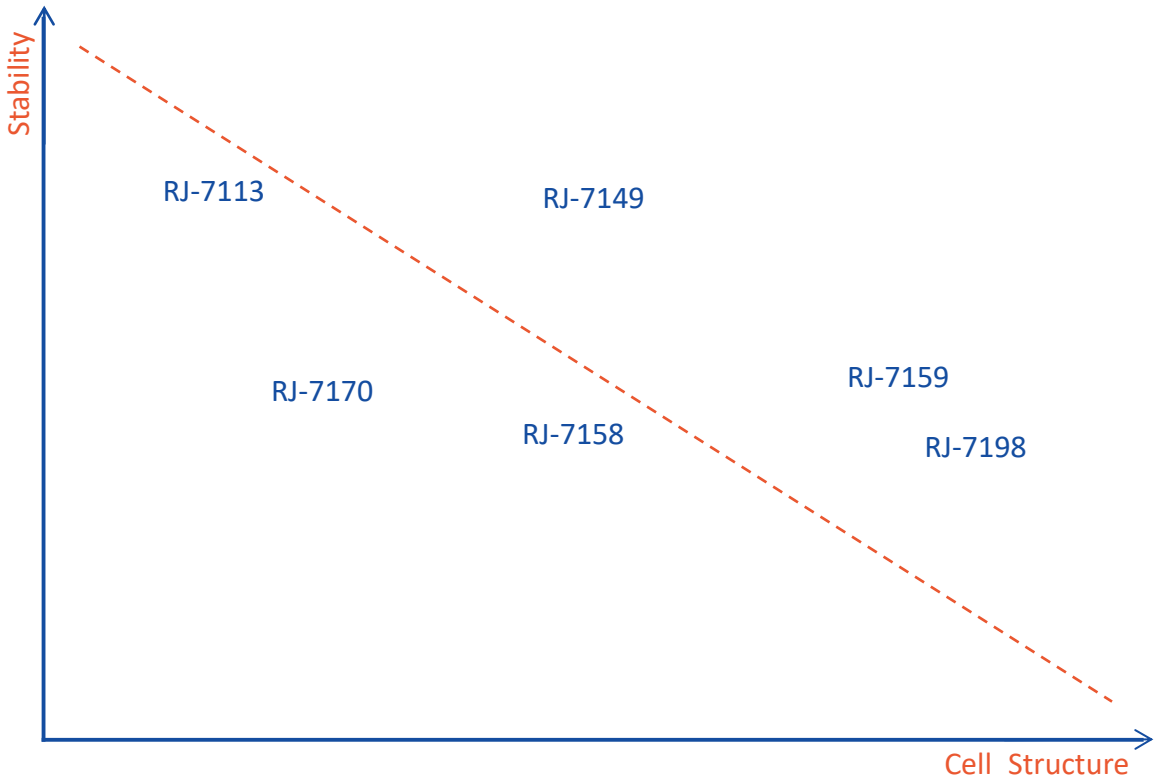
Conventional Flexible Foam

2023

Silicone Surfactant

RUISiL	Density (kg/m³)	Efficiency	Stability	Process Latitude	Cell Structure	Product Description
RJ-7113	5-25	H	+++	+	+	End-capped silicone for low/ultra low density foam, providing excellent stabilization.
RJ-7149	8-35	M-H	+++	+++	++	High potency silicone providing excellent foam stability and improving hardness for high filler foam.
RJ-7158	8-40	H	++	+++	++	General application silicone providing high emulsification and excellent stabilization for liquid CO ₂ blown.
RJ-7159	12-50	M	++	+	+++	Silicone providing excellent fine open cells and good breath ability.
RJ-7170	12-80	M	+	++++	++	Silicone providing high ball rebounding, fine and even cell structures, high breath-ability for a wide range of foam densities.
RJ-7195	12-50	M	+++	+	+++	Uniform density silicone providing good cell stabilization for foam liquid CO ₂ blown.
RJ-7198	8-35	H	++	+++	+++	Excellent cell stabilized silicone improving surface and fine cell structures.
* RJ-7159A	10-40	M	+++	++	+++	Silicone providing high frothing height, superior density distribution, and good froth stability for CO ₂ foaming process.
RJ-7195A	12-50	M	+++	+	+++	Silicone providing good breath-ability, fine regular cells, and superior density distribution.

L = Low Efficiency; M = Middle Efficiency; H = High Efficiency
+ = Middle; ++ = Good; +++ = Excellent; ++++ = Extreme
A = Eco- friendly products with the content of D4,D5,D6<0.1%, low VOC and low Odor.
* Popular Product



RUISiL
Standard specifications do not represent the final quality.
To inquire about other eco-friendly products, please contact us.

FR Foam Silicone Surfactant



RUISiL	Density (kg/m³)	Efficiency	Process Latitude	Cell Structure	BS 58 52	TB 117	Product Description
RJ-7218	15-50	M-H	+++	+++	+	++	Silicone providing excellent fine cells, suitable for most foam machines.
RJ-7221	20-60	M	++++	++	+	++	Wide processing FR silicone providing excellent fine cell and good emulsification.
RJ-7288	15-50	M-H	+++	++	++	++	Universal surfactant for manufacturing FR PU foam with excellent processing latitude.
RJ-7250	20-50	M	++	+	+++	++	Silicone providing high emulsification and good foam yield.
* RJ-7221A	15-60	M-H	++++	++++	+	+++	Silicone with low emission and low odor, suit CO ₂ top pressing process.

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VE Foam Silicone Surfactant

RUISiL	System	Efficiency	Product Description
RJ-7308	MDI	H	Wide processing silicone providing excellent breath-ability.
RJ-7310	TDI	L-M	Silicone providing fine cell structures, used in low density PU foam.
* RJ-7348	MDI	H	Silicone improving frothing stability for low density and mechanical properties. Performing well in low density VE foam.

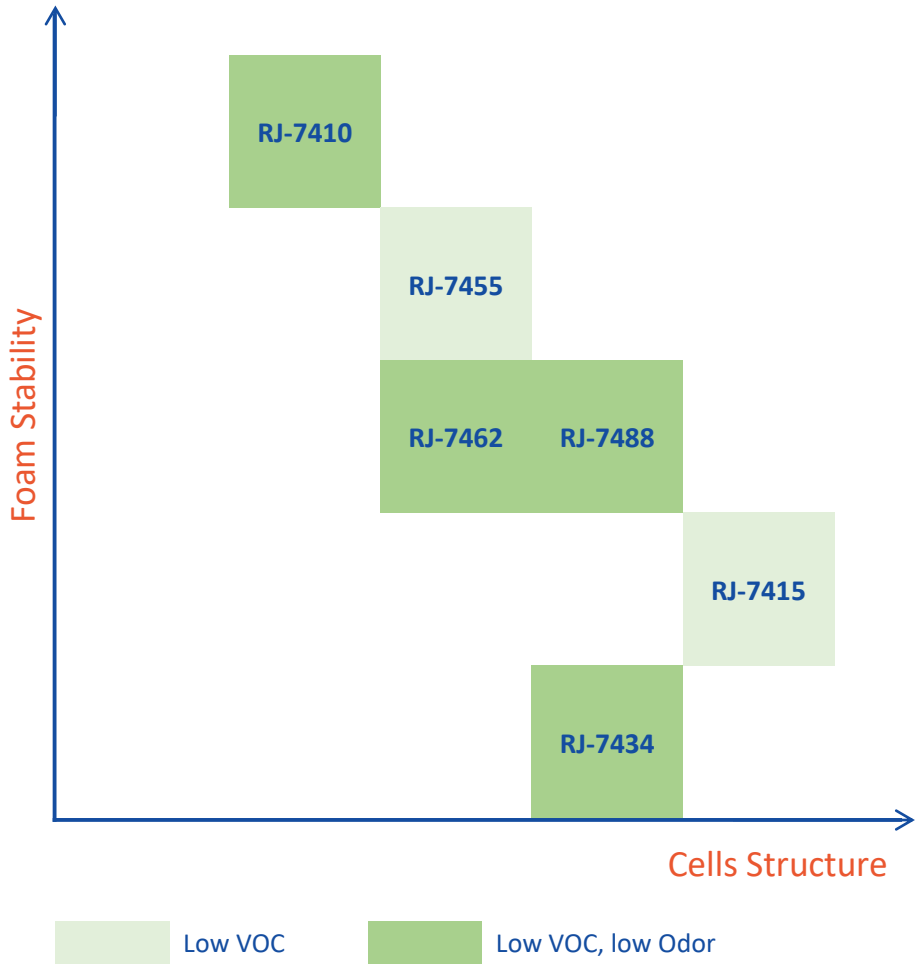




RUISiL	System	Efficiency	Stability	Low VOC & FOG	Low Odor	Product Description
RJ-7410	TM80 TM50	H	+++	++	√	TM80 for molded foam. Providing excellent performance of cell structure and stability.
RJ-7455	TDI&TM	H	+++	++		Balanced and comprehensive silicone used in both molded and slab-stock HR foam.
RJ-7488		H	++	++	√	Stabilizing silicone providing excellent cell structure, eliminating surface voids, and preventing collapse for low density foam.
RJ-7415		L	++	++		Good cell opening silicone providing great cell structures and fine processing latitudes.
RJ-7434	MDI&TM	L-M	+	++	√	Good cell opening silicone providing uniform cell structures.
RJ-7462		L	++	+++	√	TM50 for auto molded. Providing fine cell structures.

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Rigid Foam Silicone Surfactant

RUISiL	Compatibility	Nucleation	Flow-ability	Surface	Thermal Conductivity	Blowing Agent	Property	Application				
								Sandwich Panels		Block Foam	Appliance	Pipe(Tube)
								Continuous	Discontinuous			
RJ-7509A	++	++	+++	++	++	NP, CP	Silicone providing good compatibility, cell stability and flow-ability.	√	√		√	√
RJ-7536	+++	+++	++	++	++	CP, H ₂ O	Excellent balanced silicone.		√		√	
RJ-7537	+++	+++	+++	+++	++	CP, NP	End-capped silicone, providing better flow ability and improving surface appearance.		√			√
* RJ-7542	+++	++	++++	++++	++	HFC, NP	Good adhesion to metal layer; providing excellent flow-ability and surface appearance.	√	√	√		
RJ-7544	+++	++	+++	++	++	HFC, H ₂ O	Silicone reducing levels of auxiliary blowing agent and providing excellent dimensional stability.	√	√		√	√
RJ-7560	++	++	++	++	+++	HFC, HC, LBA	Silicone providing low thermal conductivity, fine foam cells and good foam surface appearance.	√	√		√	√
RJ-7569	++	++	+++	++	++	Wide	Used in general applications providing fine and regular foam structures.	√	√	√	√	√
* RJ-7571	+++	+++	++++	+++	+++	HFC, HC, Pentane	Improving surface appearance and compatibility for CP systems. Providing good low thermal conductivity.	√	√		√	
* RJ-7573	++++	++	++++	++	++++	CP	Providing very low thermal conductivity, stronger emulsification, fine cell structure and uniform density distribution.	√	√		√	
* RJ-7574B	+++	++	++	+++	+++	CP, LBA, HFO	Low cyclic silicone improving flow-ability, good thermal conductivity.	√	√		√	
RJ-7579	+++	+++	++++	+++	++	HFC, NP	Providing very good foam fluidity, regular density distribution, excellent stabilization and compressive strength.	√	√			
RJ-7580	+++	+++	++++	++++	++	HFC, NP	Providing excellent surfactant appearance and low freezing point.	√	√			
RJ-7585	++	+++	+++	+++	++	HFC, HC	Providing good nucleation and cell stability; reducing surface voids; improving density distribution.	√	√	√		

++ = Middle +++ = Good ++++ = Excellent * Popular Product

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One Component Foam(OCF)
Silicone Surfactant



RUISiL	Application	Yield	Cell Structure	Dimensional Stability	Property
RJ-7527	Summer	++	+++	+++	Providing good open cells and less shrinkage.
RJ-7529	Winter	++	+++	++++	Providing excellent dimensional stability, good nucleation, flow ability, regular cell structure and uniform density distribution.
RJ-7539	Summer	++	++	+++	Providing good dimensional stability and cell opening performance.

++ = Middle +++ = Good ++++ = Excellent
L = Low Efficiency M = Middle Efficiency H = High Efficiency

Spray Foam
Silicone Surfactant

RUISiL	System	Emulsify	Cell Structure	Property
* RJ-7590	Water	++	+++	Silicone for pure water low density foaming systems, providing excellent cell opening.
* RJ-7593	HFC	+++	+++	Providing excellent flame retardant properties in rigid foam applications and excellent cell structures in shoe sole applications.
RJ-7594	HFO/Water	++	+++	Improving cell structures, hardness and excellent surface appearance.



The traditional insulation leaves gaps and space where air infiltration can be a major source of energy loss, while spray foam is a great solution to this problem.

Microcellular PU Shoe Silicone Surfactant

RUISiL	Application	Density (kg/m³)	Property
RJ-7601	General Silicone	>0.25	Providing extra fine cells.
RJ-7610	Low Density	0.23-0.45	Improving surface and making skin bright.
RJ-7616	Ultra fine cells	>0.25	Strong stabilizing silicone.
RJ-7618	Open cells	>0.25	Reducing shrinkage.



Cell Regulator

RUISiL	Application	Cell	Property
RJ-7651	Wet Base	Medium-Large	Improving curing rate and promoting water-DMF replacement.
RJ-7665	Wet Base	Medium Round	Providing uniform and moderate round cells, improving water-DMF replacement.

Hydrophobic Agent

RJ-7669	Solvent system	Increasing coating hydrophobe.
RJ-7700	Water-based system	Increasing coating hydrophobe.

Hand-feeling Agent

RUISiL	Application	Slippery	Anti-adhesion	Wear Resistance
RJ-7872	Solvent/Water	Soft	√	√
RJ-7875	Water	Lubricating	√	
RJ-7877	Solvent/Water	silky	√	√
RJ-7882	Solvent/Water	Oil	√	√ √

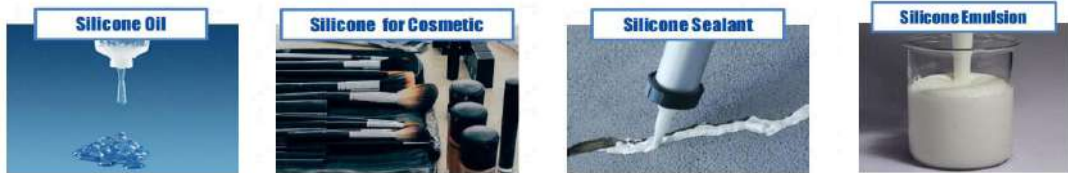
Polyurethane Resin (Silicone Polyether Copolymer)

RUISiL	Leveling	Compatibility	Resin modification	Property
RJ-7801	√	√	√	Contain polyether.
RJ-7805			√	No polyether.
RJ-7812			√	Double terminal tetrahydroxyl.
RJ-7815		Amino/Methoxy		Reducing silicone migration, improving wear resistance, hydrophobe and special feel.

For Leather product list, please contact us.



RUISiL Other Products



R&D Center
Factory&Warehouse



Warehouse in Turnhout, Belgium, EU



Warehouse in TX, CA and OH, USA

Ruijiang Chemical R&D Center has more than 30 R&D and QA/QC engineers, having established long-term cooperative relations with multiple colleges and scientific research institutions, and hired experts as company consultants to help guarantee products and technical services.

RUISiL products have passed the standard of SGS, ISO9001(QMS), and ISO14001(EMS).



Practical, Innovation, Struggle

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