



A Subsidiary of PETRONAS Chemicals Group

Silicone Release Agent for Food Packaging

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Typical release application

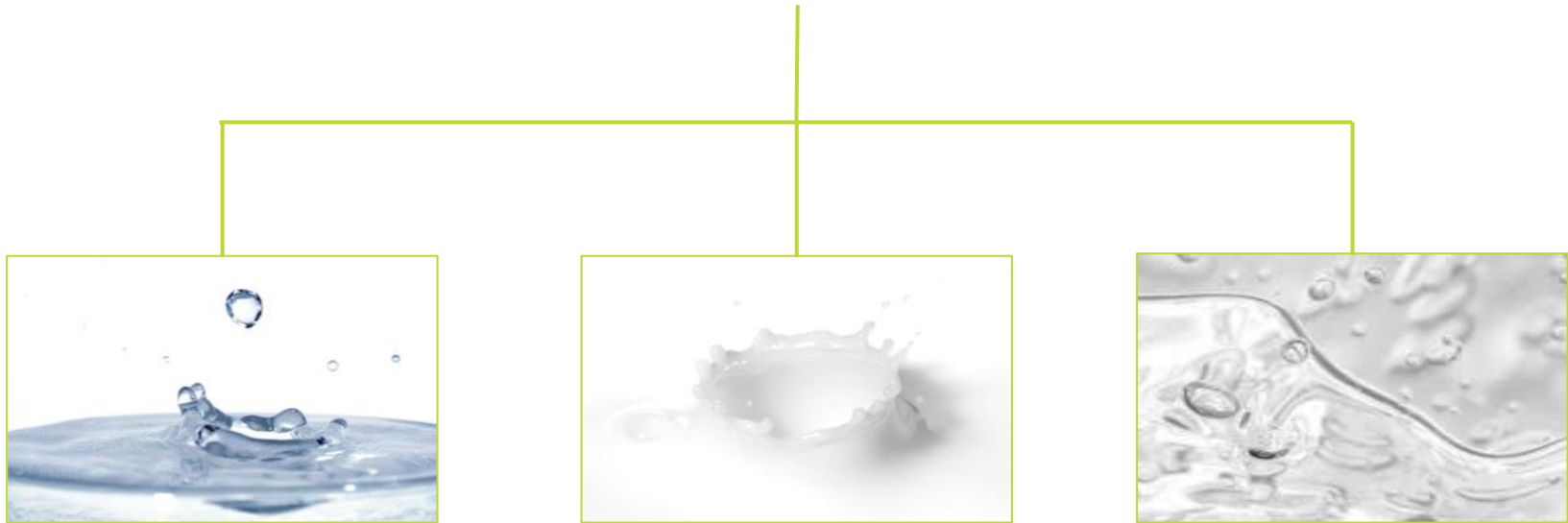


Release agent for food packaging

- Silicones
- Vegetable Oil
- Organic waxes
- Lecithin
- Others



Release agent- forms



Fluids

Emulsions

Film Former

Release agent - properties

- To maintain a continuous film (which is inert) between mold and molded objects to allow easy release from the mold
- To provide mar and scratch resistance to the finished article, apart from improve appearance
- BRB supplied silicone based release agent for plastics, rubber, metal, etc.



Release agent – Silicones vs Non-Silicones

	Silicones	Non-Silicones
Use level	<ul style="list-style-type: none">• Effective release at 1-5% active level• Reduced production cost, better process control, lower rejection rates	<ul style="list-style-type: none">• High addition level for desired release• Increase production cost, increase process variation
Heat stability	<ul style="list-style-type: none">• Suitable for high temperature application• Resist oxidation and prevent buildup	<ul style="list-style-type: none">• Organic based release agent may degrades at high temperature, which leads to formation of sticky film
Volatility	<ul style="list-style-type: none">• Low volatility	<ul style="list-style-type: none">• Certain organic based release agent become volatile at high temperature and generate smoke
Safety	<ul style="list-style-type: none">• Silicones is inert in nature, non-reactive to molded parts	<ul style="list-style-type: none">• Certain organic based release agent affect odour due to high use level
Others	<ul style="list-style-type: none">• Less residue	<ul style="list-style-type: none">• Oil trace

BRB Range of water based release agent

Properties	BRB Sempure 357	BRB Sempure 607
Appearance	Homogenous, milky white	Homogenous, milky white
Active	35%	60%
Emulsifier	Non-ionic	Non-ionic
Specific Gravity (25°)	1.0	1.0
Viscosity of Base Fluid (25°)	350 mm ² /s	350 mm ² /s
pH	2.5 – 5.5	3.5 – 6.5
Diluent	Water	Water

BRB Range of water based release agent

Benefits	<ul style="list-style-type: none">• Suitable for all types of materials – plastic, rubber, aluminum, paper, board• Outstanding heat resistance• Chemically inert• Good water repellent properties• Good lubricating and release properties• Free of GMO additives or materials of animal origin• Odourless• Non-staining
Compliance	<ul style="list-style-type: none">• Ingredients of BRB Sempure 357 and BRB Sempure 607 are listed in European Union Regulation 10/2011• USA: FDA 21 CFR 176.170, 176.80, 181.28 and 178.3570 (as food contact lubrication and release agent)• USD: FDA 21 CFR 176.200 and 176.210 (as defoaming agent in the manufacture of food packaging materials and adhesives)• Germany: BfR XIV, XV, XXI, XXXVI, XXXVI/2 and XLIV• INS H1: listed as lubricant, anti-rust films or release agent

BRB Sempure 357 Addition Level

Release of plastic and paper	<ul style="list-style-type: none">• Dilute with water to 10 – 30 parts• Direct spray into thin layer evenly onto mold
Anti-blocking sheet lubrication	<ul style="list-style-type: none">• Dilute with excess water to 100 – 200 parts• Spray into thin layer
Formulating with organics	<ul style="list-style-type: none">• Good compatibility with other food contact ingredients



Other BRB range of release agent

Oil based	<ul style="list-style-type: none">• BRB Silicone Oil 100 cSt Food Grade• BRB Silicone Oil 350 cSt Food Grade• BRB Silicone Oil 1000 cSt Food Grade• BRB Silicone Oil 12500 cSt Food Grade• BRB Silicone Oil 30000 cSt Food Grade• BRB Silicone Oil 60000 cSt Food Grade• BRB Silicone Oil 100000 cSt Food Grade
Resin based	<ul style="list-style-type: none">• BRB Siloen[®] SR 385D<ul style="list-style-type: none">➤ A medium hardness Methyl-Phenyl resin supplied at 50 % solid in xylene, designed to produce non-stick coating materials that in contact with foodstuff➤ Chemically inert, easy to use and with heat stability up to 650°C in combination with aluminum or micaceous iron pigments➤ Compliance with BfR recommendation XV Silicones and FDA Regulation 21 CFR 175.300 chapter (b) (3) (xxviii)



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