



**Dow**

# When compliance meets performance

DOWSIL™ 8024 Food Contact Release Emulsion

**DOWSIL**™

silicones by



# THIS IS DOW



2019 NET SALES

**\$43B**



EMPLOYEES

**~36,500**



MANUFACTURING SITES

**109 sites**



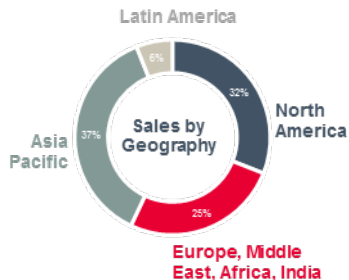
GLOBAL REACH

**31 countries**  
in which Dow manufactures products

# DOW CONSUMER SOLUTIONS

2019 NET SALES

**\$5.4B**



EMPLOYEES

**~7,000**

MANUFACTURING SITES

**21 sites**

GLOBAL REACH

**12 countries**  
in which Dow manufactures products



**Innovation & manufacturing footprint across North America, Latin America, Europe and Asia**



**12 R&D locations**



**Broad portfolio of chemistries with high value innovation pipeline**



**Largest global silicones player<sup>1</sup> with 75+ years of industry leadership**

# DELIVERING A WINNING CUSTOMER EXPERIENCE

## Easy

**DOW DESIGNS SERVICES TO MEET THE EVOLVING NEEDS OF CUSTOMERS,** so interactions are simple, intuitive and effective.



- Customer-focused **Dow.com** features an expanded e-commerce platform enabling easy product selection, sampling and purchase of select products
- The annual **Customer Experience (CX) survey** captures feedback from direct customers and distributors to help identify areas for improvement

## Enjoyable

**DOW SHARES OUR CUSTOMERS' PASSION FOR INNOVATION** with an openness and agility that makes working with our people a pleasure.



- Customers collaboratively innovate with us at our new **Inspiration Studio** in Seneffe, Belgium, where Dow's materials science technologies are on display all in one place

## Effective

**DOW EARNS OUR CUSTOMERS' TRUST** with consistent quality and supply while partnering to improve their business and the planet.



- **Regional Customer Care Centers** get to the root of customer problems and provide real-time analytics to improve CX
- Partnering with customers on new recycling technologies and resource conservation as part of **advancing a circular economy**



# PROVEN, RELIABLE, SAFE AND EFFECTIVE SOLUTIONS FOR INDUSTRIAL AND CHEMICAL PROCESSING

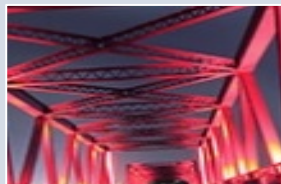
Foam control agents
Coating resins & binders
Coating & ink additives
Surface & material modifiers
Processing aids
Mold release agents
Surfactants
Formulation intermediates
Silanes



Pulp Processing



PU Additives



Coatings



Food & Beverages



Plastic Additives



Textile Treatment



Agrochemicals



Automotive Care



Leather Finishing



Optimized  
manufacturing  
*process*



Enhanced  
product  
*properties*



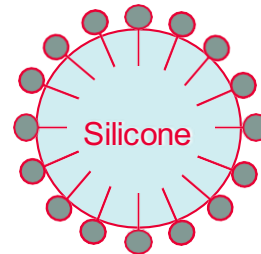
Improved  
*sustainability*  
performance





## CONTENT

- Market trends
- Silicones in food release applications
- New DOWSIL™ 8024 Food Contact Release Emulsion
- Other Dow food contact silicone emulsions



# Food processing industry

## Growth drivers

- Consumer healthier choices
- Consumer protection regulations
- Urbanization
- Socioeconomic development

## Trends & developments

- Safe
- Natural appeal
- Wellness

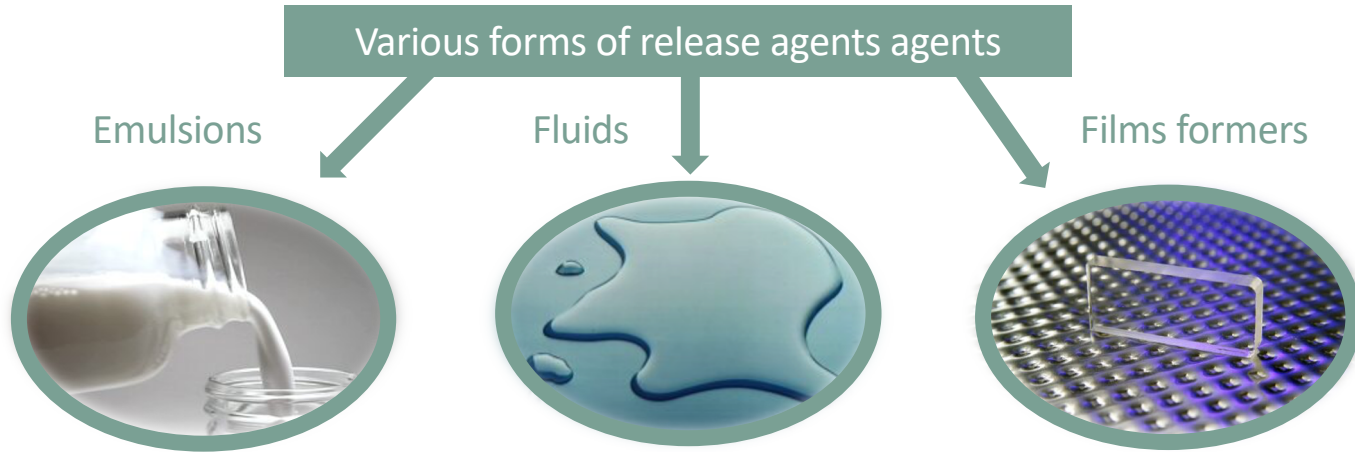


## Competitiveness

- Flexible responding to market trends
- Continuously strive for productivity improvements

# FUNCTION AND FORMS OF RELEASE AGENTS

- To keep a continuous inert parting film between a mold and a molded object to allow easy removal of the object from the mold.
- To improve mar and scratch resistance, as well as appearance, of the finished product.
- Dow silicone release agents provide release for: Plastics, Rubber, Metals ...



# Poll: What release agents are you familiar with?

- a) Vegetable oil
- b) Organic waxes
- c) Silicones
- d) Lecithin
- e) Other

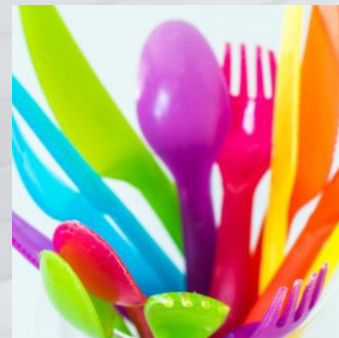
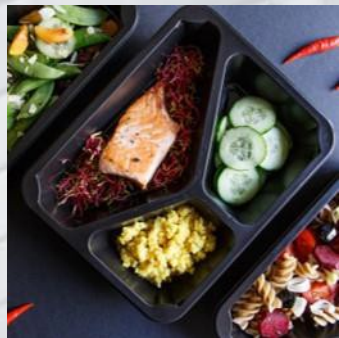


# MEET YOUR PRODUCTIVITY GOALS WITH SILICONES

Silicones	Non-silicones
<b>Low use levels</b> Efficient release with only 1%-5% actives level Reduced release agent cost, better process control, lower reject rates	<b>Higher use levels</b> More material needed, which can increase cost and process variations
<b>Safe / non-reactive</b> Non reactive to finished products	<b>Odor</b> Some organic release agents affect odor due to higher use levels
<b>Heat stable</b> Ideal for high-temperature applications. Superior oxidation resistance, prevents buildup	<b>Inferior heat stability</b> Organics may degrade at high temperatures, which may cause film sticking
<b>Low volatility</b> No excessive film or smoke	<b>More volatility</b> Some organic release agents volatilize at higher temperature producing smoke
<b>Other benefits:</b> less residue and dry hand feel	<b>Others:</b> oil trace



# Typical release applications



# NEW DOWSIL™ 8024 FOOD CONTACT RELEASE EMULSION

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- Useful as release agent for direct and indirect food contact
- High release efficiency
- Heat resistance
- Odorless
- Non-staining
- Non-corrosive
- Lubrication retain on surface

Compliance with major food contact regulations and certifications

- **China: GB 9685:** (Plastic: PET; Coating; Adhesive; Paper)
- **USA: FDA:** 21 CFR 176.170, 21 CFR 176.180, 21 CFR 181.28
- **Germany:** BfR XV, BfR XXXVI, BfR XXXVI/2
- **EU:** Plastics Regulation 10/2011
- **NSF** M1, 3H



# DOWSIL™ 8024 FOOD CONTACT RELEASE EMULSION – KEY PROPERTIES

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<b>Emulsifier type:</b>	Nonionic
<b>Diluent:</b>	Water

<b>CTM*</b>	<b>Property</b>	<b>Value</b>
0176	Appearance	milky-white liquid
0862	Non-volatile content	38-42 %w/w
0001	Specific Gravity	1.0
0007	pH	3-5

CTM\*: Corporate Test Method, copies of CTM's are available upon request.



# MARKET FEEDBACK



**Easy to use, easy to spray**

**High release efficiency, effective at low levels**

**Stable upon dilution**

**Reduce static electricity in PET containers**



**High temperature resistance**

**Low use level**

**Non reactive & odorless**

**No build-up**

**No impact on nutritional profile**



# HOW TO USE DOWSIL™ 8024 FOOD CONTACT RELEASE EMULSION

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## Paper and plastic part release

- Dilute with water to 10-30 parts
- Spray in thin layer on film or evenly on mold

## Lubricity for sheet anti-blocking

- Dilute with more water (100-200 parts max)
- Spraying in thin layer

## Reformulate with organics

- Good compatibility with other food contact ingredients

# MORE OPTIONS OF FOOD CONTACT SILICONE RELEASE EMULSION

Property	DOWSIL™ 8024 Food Contact Release Emulsion	DOWSIL™ SH 7024 Emulsion	XIAMETER™ MEM-0024 Emulsion
Non-volatile content	40 %	40 %	38.5 to 42.5 %
Material description	Milky-white liquid	Milky-white liquid	White/off-white, smooth flowable liquid
Shelf life	360 days	360 days	270 days
Regional availability	Global	Japan	North America, Latin America, South East Asia, India
Food grade compliance	GB 9685 (Plastic: PET; Coating; Adhesive; Paper), FDA (21 CFR 176.170, 21 CFR 176.180, 21 CFR 181.28), Regulation (EU) 10/2011; BfR XXXVI, BfR XXXVI/2, BfR XV; NSF M1, 3H	JHOSPA, JFdSL FDA (21 CFR 176.170, 21 CFR 176.180, 21 CFR 175.300, 21 CFR 181.28)	FDA (21 CFR 175.105, 21 CFR 176.170, 21 CFR 176.180, 21 CFR 175.300, 21 CFR 178.357, 21 CFR 181.28)
Dilution ratio suggestions	20 to 40 parts		
Application method	Spraying, dipping, wiping, or brushing		
Specific gravity	1	1	1
pH, as supplied	3 ~ 5	5.5 ~ 9.0	6.5 ~ 8.5
Emulsifier type	Nonionic	Nonionic	Nonionic
Diluent	Water	Water	Water
Applications	Proven release for paper, plastic; Sewing thread lubrication; Anti-stick for plastic sheet.		





**LEARN MORE / ORDER SAMPLE**

[www.dow.com/food](http://www.dow.com/food)

**CONTACT US**

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# DOW SILICONE ANTIFOAMS PORTFOLIO

*Compliant: GMO free, Kosher, Halal,  
FDA 21 CFR 173.340 and other*

*Globally available*

*21 CFR 173.340 Use level: 10 ppm actives allowed in food ready to be consumed.  
Refer to 21 CFR 173.340 for additional details and other allowed use levels.*

*Common uses: dairy, juices, soft drink concentrates, concentrated soups, protein supplement sport drinks, meat processing, jams, syrups, fermentations. Suitable for High and Low temperature processing*

<b>Product</b>	<b>Silicone actives / Form</b>	<b>Aqueous / Non-aqueous systems</b>
XIAMETER™ AFE-1510 Antifoam Emulsion	10% non-ionic emulsion	Aqueous
XIAMETER™ AFE-1520 Antifoam Emulsion	20% non-ionic emulsion	Aqueous
XIAMETER™ AFE-1530 Antifoam Emulsion	30% non-ionic emulsion	Aqueous
XIAMETER™ ACP-1920 Powdered Antifoam	20% white fluffy powder	Aqueous
XIAMETER™ ACP-1500 Antifoam Compound	100% silicone compound	Non-aqueous
XIAMETER™ PMX-200 Fluid, 350 cs FG	100% silicone fluid	Non-aqueous





# THANK YOU

# Q&A

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Seek

Together™