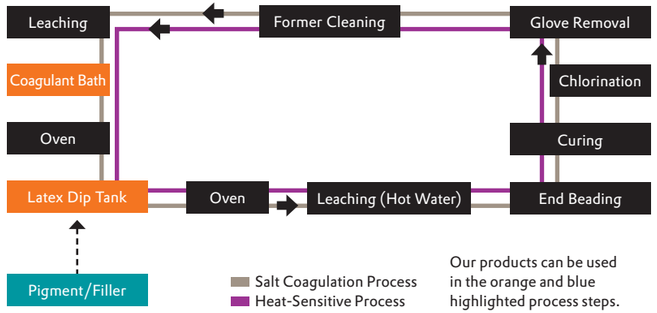
Product Overview

Solutions for Latex Dipping Processes

EVONIK
Leading Beyond Chemistry

SOLUTIONS FOR LATEX DIPPING PROCESSES

Evonik offers an extensive portfolio of solutions for latex dipping processes. Both salt coagulation and thermo-coagulation are supported by our special process additives. Our customers in the latex dipping market benefit from our expansive product range, specialty designed formulations and application expertise, and our global services.



Process	Salt coagulation Process						Heat-sensitive Process
Problems you meet	Pinhole[1]	Thin Spot[2]	Foam in Latex Tank[4]	Web on Glove [5]	Poor Compound Stability[6]	High Compound Viscosity [6]	Low coagulation efficiency
PRODUCT NAME	**WETTING AGENT**		**DEWEBBING AID**		**DISPERSANT**		**COAGULANT[7]**
SURFYNOL® LSF	●	●					
SURFYNOL® 485	●	●					
SURFYNOL® 465[3]	○	○					
SURFYNOL® DF-37			●	●			
TEGO® Antifoam 2290			●	●			
TEGOMER® DA 640					●	●	
TEGOMER® DA 850					●	●	
TEGO® Coagulant 4720							●
TEGO® Coagulant 4910							○

● highly recommended ○ suitable

[1] Foam on former from coagulant tank; poor wetting or coagulant on former especially at higher line speeds
[2] Poor wetting of coagulant onto former, especially at finger joints and cuffs
[3] Bath °C < 75°C
[4] Foam coming from stabilizers in latex
[5] "Foam lamella" forms between fingers of glove on mold
[6] Inadequate dispersion or stabilization of solids in latex compound
[7] Suitable for higher endapplication like medical gloves and textile supported gloves

	Food Compliance																			
																			Swiss Ordinance	
Product Name	**EC 10/2011**	**BfR XIV Polymerdispersion**	**BfR XV (Silicones)**	**BfR XXXVI**	**175.105**	**175.125**	**175.300**	**175.320**	**176.170**	**176.180**	**176.200**	**176.210**	**177.1210**	**177.1520**	**177.2600**	**178.3400**	**178.3725**	**GB 9685**	**List A**	**List B**
WETTING																				
SURFYNOL® TG	no	no			yes		●											●		●
SURFYNOL® LSF	no																			
SURFYNOL® 465	no	no			●		●		●	●								●	●	
SURFYNOL® 485	no																			
CARBOWET® GA-100	no	●		yes														●		●
DEWEBBING & DEFOAMING																				
SURFYNOL® DF-37	no																			
TEGO® Antifoam 2290	no	yes			●		●		●	●		●			●			no	●	
TEGO® Antifoam 2-89	no	●		●	●		●		●	●		●						no	●	●
TEGO® Antifoam 730	no	no																no		●
TEGO® Antifoam 3045	yes	yes			yes	●	●		●	●	●	●						no	yes	
DISPERSING																				
TEGOMER® DA 640	no	no																no		●
TEGOMER® DA 850	no	no			●		●		●	●								no		●
TEGOMER® DA 646	no	no																no	no	no
THERMO COAGULATION																				
TEGO® Coagulant 4720	no		no															no	no	no
TEGO® Coagulant 4910	●	●			yes							yes						●	●	

no not compliant
yes compliant
● compliant with some restrictions, please contact us

	Product Properties						Physical Data					Safety				
								Surface Tension [mN/m]								
Product Name	Chemical Base	Ionic Character	Active Content [%]	TSC [%]	Si-Free	Dosage Range [%]	pH -Value	Dynamic [mN/m] (Frequency 10Hz)	Static [mN/m] (Frequency 0.1Hz)	Cloud Point 0.1% in H_2O [°C]	Cloud Point 0.1% in $Ca(NO_3)_2$ [°C]	VOC (DIN ISO 11890/2), (ASTM D6886-14) [%]	ROHS	REACH	Prop 65	Inventory *
WETTING																
SURFYNOL® TG	Blend of Gemini Surfactant & NPE	Nonionic	83	100	●	0.05 – 2	n.d.	30	37	76	53	n.d.	yes	no	no	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
SURFYNOL® LSF	Blend of Gemini Surfactant & Alcohol Ethoxylate	Nonionic	42	82	●	0.05 – 06	n.d.	38	62	100	100	n.d.	yes	yes	no	1, 2, 3, 4, 5, 6, 7, 8
SURFYNOL® 465	Ethoxylated Gemini Surfactant	–	100	100	●	0.1 – 2	7	34	42	96	90	~0	yes	yes	yes	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
SURFYNOL® 485	Ethoxylated Gemini Surfactant	–	100	100	●	0.1 – 2	7	47	49	100	100	~0	yes	yes	yes	1, 2, 3, 4, 6, 7, 8, 9, 10
CARBOWET® GA-100	Blend of Gemini Surfactant & Alcohol Ethoxylate	Nonionic	85	100	●	0.2 – 2	5.5	29	38	73	62.5	~0	yes	yes	yes	1, 2, 3, 4, 6, 8, 9
DEWEBBING & DEFOAMING																
SURFYNOL® DF-37	Blend of Gemini Surfactants	Nonionic	100	100	●	0.1 – 0.5	n.d.	–	–	–	–	~0	yes	yes	yes	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
TEGO® Antifoam 2290	Paraffinic Oil	–	100	100	●	0.05 – 0.2	5 – 8	–	–	–	–	>0.02	yes	yes	yes	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
TEGO® Antifoam 2-89	Polyether Siloxane	–	20	20	–	0.05 – 0.2	6 – 9	–	–	–	–	0.2	yes	yes	yes	1, 2, 3, 4, 5, 7, 8, 9
TEGO® Antifoam 730	Silicone Oil/OMS	–	30	30	–	0.05 – 0.1	5 – 7	–	–	–	–	n.d.	yes	yes	no	1, 2, 3, 4, 5, 6, 7, 8, 9
TEGO® Antifoam 3045	Vegetable Oil	–	100	100	–	0.2 – 1	5 – 7	–	–	–	–	~0	yes	yes	yes	1, 2, 3, 4, 5, 7, 8
DISPERSING																
TEGOMER® DA 640	Polyetherphosphat	Anionic	30	30	●	0.2 – 2	8 – 9	50	67	n.d.	n.d.	0.1	yes	yes	yes	1, 2, 3, 5, 6, 7, 9, 10
TEGOMER® DA 850	Polymeric nature	Nonionic	40	40	–	0.2 – 2	6 – 7.5	n.d.	n.d.	n.d.	n.d.	0.5	yes	yes	no	1, 3, 5, 6, 7, 9
TEGOMER® DA 646	Modified Polyether	Nonionic	100	100	●	0.2 – 2	n.d.	40	60	20	20	n.d.	yes	yes	yes	1, 2, 3, 4, 5, 6, 7, 8, 9, 10
THERMO COAGULATION																
TEGO® Coagulant 4720	Polymeric	Nonionic	100	100	–	0.1 – 1.0	8 – 11	n.d.	n.d.	n.d.	n.d.	n.d.	yes	yes	yes	1
TEGO® Coagulant 4910	Polyether Siloxane	Nonionic	100	100	–	0.1 – 1.0	5 – 8	n.d.	n.d.	n.d.	n.d.	n.d.	yes	yes	yes	1, 2, 3, 4, 5, 6, 7, 8, 9, 10

1 EINECS (Europe)
2 TSCA (USA)
3 DSL (Canada)
4 ENCS (Japan)
5 AICS (Australia)
6 ECL (South Korea)
7 PICCS (Philippines)
8 IECSC (China)
9 TCSI (Taiwan)
10 NZIoC (New Zealand)

no not compliant
yes compliant
n.d. not determined
● compliant with some restrictions, please contact us

* is subject to constant updates, please contact us for further information

LATEX DIPPING

Evonik offers an extensive portfolio of solutions for latex dipping processes. Both salt coagulation and thermo-coagulation are supported. Our customers in the latex dipping market benefit from our expansive product range, specialty designed formulations and application expertise and our global services.

1
Removal of chemical residues

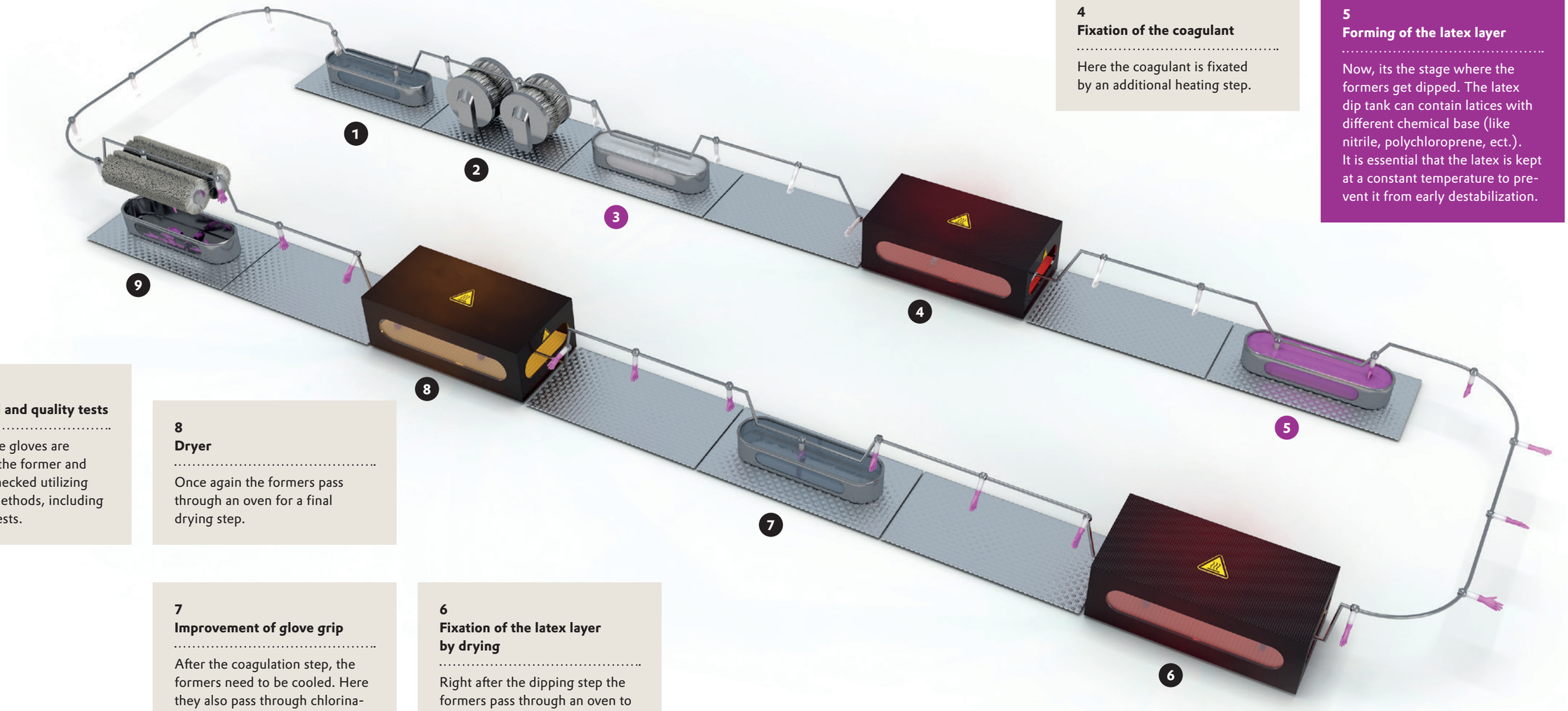
These little hands, called hand formers, need to be meticulously cleaned to make sure that no chemical residue is there any more.

2
Removal of solid residues

Any leftover debris will be brushed away. Sometimes the formers also run through a leaching batch to make sure that any remaining chemicals have completely gone.

3
Proper wetting of the coagulant

This is the first step where our additives come in. The formers are dipped in the coagulant bath. The coagulant makes sure that in the later stage the latex adheres to the former.



4
Fixation of the coagulant

Here the coagulant is fixated by an additional heating step.

5
Forming of the latex layer

Now, its the stage where the formers get dipped. The latex dip tank can contain latices with different chemical base (like nitrile, polychloroprene, ect.). It is essential that the latex is kept at a constant temperature to prevent it from early destabilization.

9
Glove removal and quality tests

At this stage the gloves are removed from the former and meticulously checked utilizing different test methods, including water and air tests.

8
Dryer

Once again the formers pass through an oven for a final drying step.

7
Improvement of glove grip

After the coagulation step, the formers need to be cooled. Here they also pass through chlorination tanks, which gives the glove a smoother surface and makes donning and doffing much easier.

6
Fixation of the latex layer by drying

Right after the dipping step the formers pass through an oven to start the coagulation process, due to the temperature and the predipped salt-layer.

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