

Tissue Additives

Auxiliaries for pulp and tissue manufacturing



Our competence for your soft and safe products

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Evonik is one of the world's leading specialty chemicals companies. Our activities focus on the key megatrends health, nutrition, resource efficiency and globalization.
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We are active in over 100 countries around the world. The continuous expansion of our global presence in growth markets ensures outstanding growth pros-

pects for our specialty chemicals business area. A balanced spectrum of business activities and end-markets is guaranteed by a close collaboration with our customers and a joint search for solutions. These are the key factors to our success. Our outstanding application and process expertise is based on a broad technology platform of organic specialty surfactants and organomodified

siloxanes. Our product range covers a variety of products with specific application profiles for the pulp and tissue industry:

Softeners / debonders and lotions under the AROSURF® brand name as well as wetting agents and defoamer auxiliaries under the AIRASE®, DYNOL™, SURFYNOL®, TEGO® Antifoam and TEGOPREN® brand names.



THE PRODUCT RANGE OF EVONIK COVERS A VARIETY OF PRODUCTS WITH SPECIFIC APPLICATION PROFILES WHICH ADDRESS THE PULP AND TISSUE INDUSTRY.

AROSURF®

Our AROSURF® products are highly substantive wet end softeners/debonders with high, medium and low debonding effect for premium to low sheet bulkiness with all qualities of feedstocks. They are highly substantive softeners with low impact on tensile strength to achieve good machine run-ability and excellent surface smoothness of the tissue.

In the converting line AROSURF® products are used as topical softeners or lotion concentrates. Based on various resources they provide smooth and soft handfeel for many final applications.

Most of our products are food contact compliant (FDA and/or BfR) or INCI listed (cosmetic ingredients).

TEGOPREN®

Our TEGOPREN® brand is based on the organomodified siloxanes chemistry.

The general molecular architecture of TEGOPREN® products is primarily characterized by their multifunctionality.

Their properties include softening, levelling, wetting and dewetting, lubrication, defoaming, emulsifying and dispersing or coagulating.

As a result of the siloxane component TEGOPREN® products are highly surface active. TEGOPREN® products can reduce the surface tension much more than organic surfactants. They are also surface active in non-aqueous systems. With their high molecular weight and maximal flexibility they stabilize or spread interfaces.

DYNOL™ / SURFYNOL®

DYNOL™ surfactants and the gemini-surfactant types under the brand name SURFYNOL® are low-foam, superwetting and coalescing surfactants for difficult-to-wet substrates. DYNOL™ and

SURFYNOL® surfactants have a broad utility and are recommended for use in pulp and tissue applications. These unique, multifunctional additives are designed to provide superior dynamic surface tension reduction and excellent stability in systems ranging from pH 3–13.

AIRASE®/TEGO® ANTIFOAM

Evonik offers a full foam-control spectrum with organic oils, siloxanes and molecular based technologies: With specialties branded as AIRASE® and TEGO® Antifoam, we offer formulators to identify the right foam control tools for a broad range of systems and applications.

Product overview

Wetting Agents	Appearance at 20 °C		Chemical base	Area of application
DYNOL™ 360	liquid	colorless	non-ionic organic	non foaming wetting for black liquor, quick dewatering and low foaming flotation additive
SURFYNOL® AD01	liquid	pale yellow	non-ionic organic	non foaming wetting for black liquor, quick dewatering, photo paper levelling
TEGOPREN® 4506	liquid	colorless to pale straw, brownish	non-ionic OMS	wetting for black liquor, quick dewatering and emulsifier for defoamers
Antifoam/Defoamer				
AIRASE® 4500	liquid	white yellow	organic oil defoamer, Si-free	sewage plant, recycling, dissolving
SURFYNOL® MD20	liquid	clear yellow	organic surfactant, Si-free	fluff pulp, black liquor, recycling, white water, quick dewatering (cleaning, bleaching) newsprint to C.P.
TEGO® Antifoam KE 600 EC	liquid	white emulsion	OMS/Organic oil in water	sewage plant, recycling, dissolving
TEGO® Antifoam 3062	liquid	amber, opaque	OMS	de-inking, dissolving
TEGO® Antifoam 2-89	liquid	white emulsion	OMS in water	photo paper, deairing, deinking, bleaching, cleaning, flotation
Softener/Debonder				
AROSURF® PA 842 V	liquid	clear to hazy	cationic/non-ionic proprietary blend	wet end, strong softener/debonder
AROSURF® PA 844 V	liquid	clear to hazy	cationic/non-ionic proprietary blend	wet end, medium strong softener/debonder
AROSURF® PA 780 V	liquid	clear	cationic/non-ionic proprietary blend	wet end, medium debonder with good softening
Lotions				
AROSURF® PA 835 V	liquid	clear to yellow	mixture of organic oils	converting, lotions
AROSURF® PA 858	liquid	clear to yellow	proprietary blend of non-ionic softener	converting, lotions
AROSURF® PA 871	liquid	clear to yellow	proprietary blend of non-ionic softener	converting, lotions
AROSURF® PA 935	liquid	colorless	non-ionic OMS	converting, lotions

Food contact (FDA, BfR, or Cosmetic Ingredient INCI)	Density g/ml at 25°C	Viscosity, dynam. at 25°C, mPas	Flash point °C
-	0.94-1.04	90-100	175
-	0.85-0.9	2800	> 100
FDA, BfR XXXVI	1.03-1.05	2000-3400	> 100
Antifoam/Defoamer			
FDA, BfR XXXVI	0.99	350	193
-	1.0	240-260	130
FDA, BfR XXXVI	1.0	200	> 100
FDA, BfR XIV	1.0	1000	> 100
FDA, BfR XXXVI	1.0	400	> 100
Softener/Debonder			
FDA, BfR XXXVI	1.0	1000-2000	> 100
FDA, BfR XXXVI	1.0	150-300	> 100
FDA, BfR XXXVI	1.0	50-150	> 100
Lotions			
BfR XXXVI	0.885	20-30	> 150
FDA, INCI	0.94	75-80	< 100
FDA, INCI	0.90	25	< 100
FDA, INCI, BfR XXXVI	1.02	90-300	> 100

PULP MANUFACTURING

The pulp producing process involves several stages. Our DYNOL™ and TEGOPREN® wetting agents and defoamer boosters are used as intermediates in the process of pulp production to improve water recycling and optimize the efficient use of chemicals and foam control.

TISSUE MACHINE

Our AROSURF® softeners/debonders are introduced at several points in the wet end: headbox, stuff box or machine chest. They should be incorporated into the furnish at the point in the wet end which maximizes contact time with the fibers, thus allowing complete and uniform exhaustion of our substantive products.

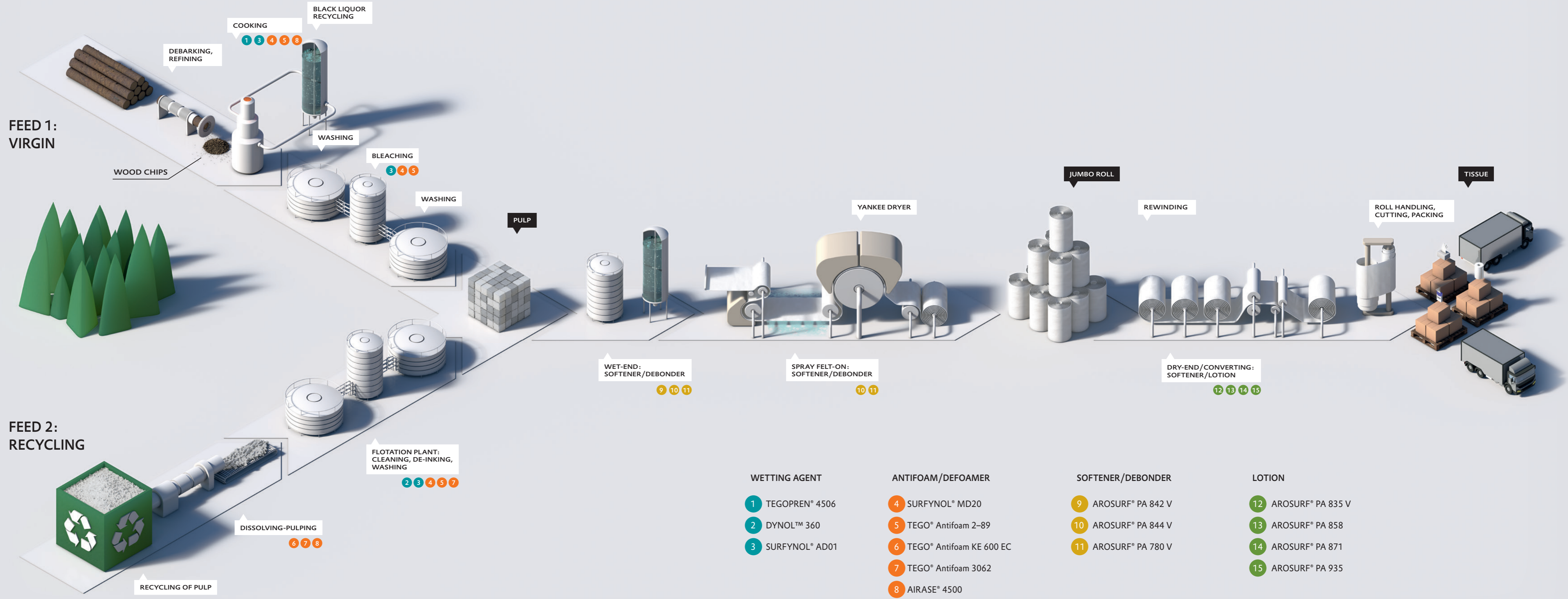
CONVERTING

Our AROSURF® lotion concentrates recommended for converting may be diluted or further formulated to ready to use softeners/lotions. Due to the variety of specific requirements and application techniques like spray, kiss roll or rotor damping, we offer assistance for the development of customized solutions.

TWO WAYS OF PULP MANUFACTURING

FROM PULP TO TISSUE

TISSUE CONVERTING



WETTING AGENT

- 1 TEGOPREN® 4506
- 2 DYNOL™ 360
- 3 SURFYNOL® AD01

ANTIFOAM/DEFOAMER

- 4 SURFYNOL® MD20
- 5 TEGO® Antifoam 2-89
- 6 TEGO® Antifoam KE 600 EC
- 7 TEGO® Antifoam 3062
- 8 AIRASE® 4500

SOFTENER/DEBONDER

- 9 AROSURF® PA 842 V
- 10 AROSURF® PA 844 V
- 11 AROSURF® PA 780 V

LOTION

- 12 AROSURF® PA 835 V
- 13 AROSURF® PA 858
- 14 AROSURF® PA 871
- 15 AROSURF® PA 935

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