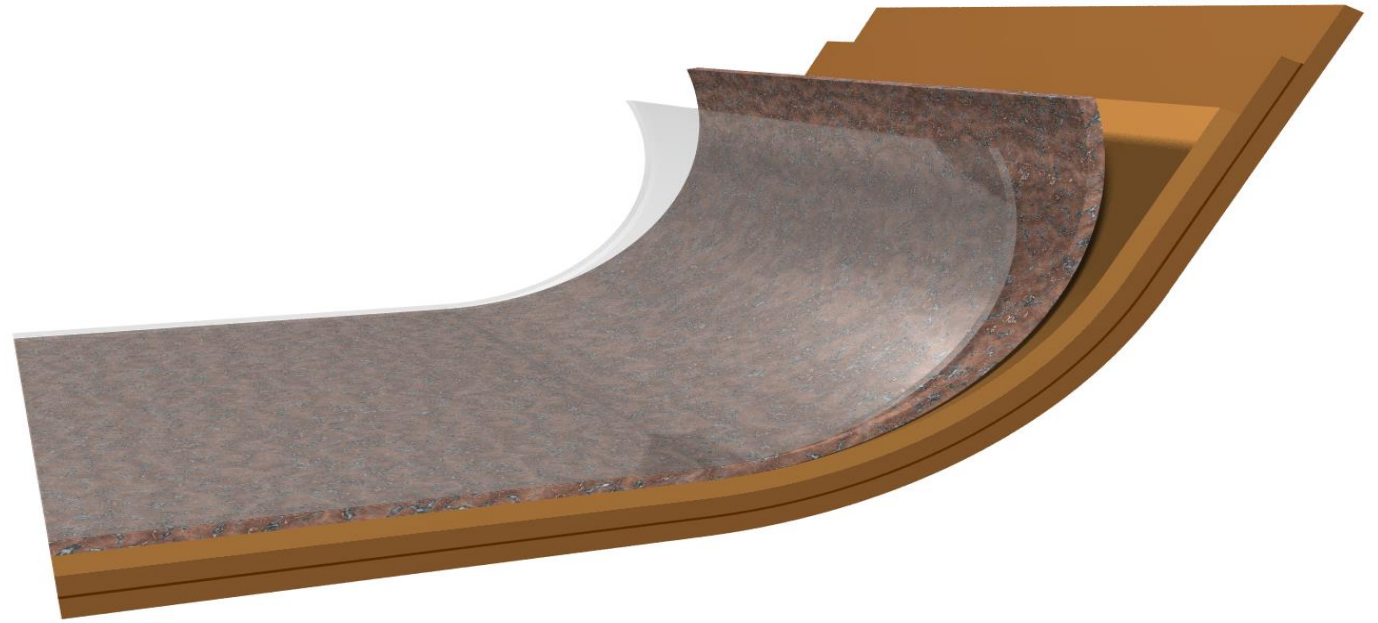
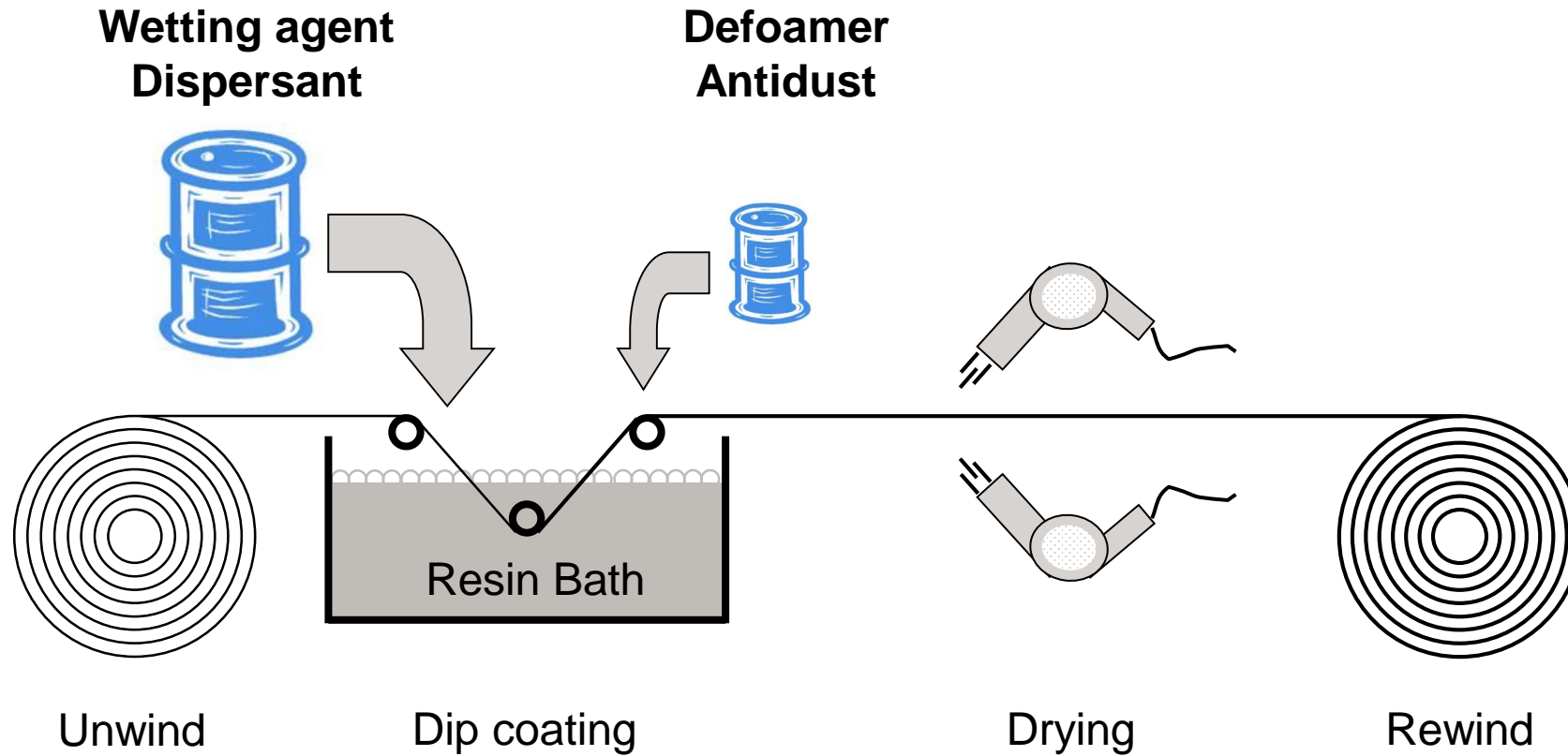


Additives for Paper Impregnation

BL Interface & Performance



Paper Impregnation Process Needs Additives



Wetting Agents for Paper Impregnation

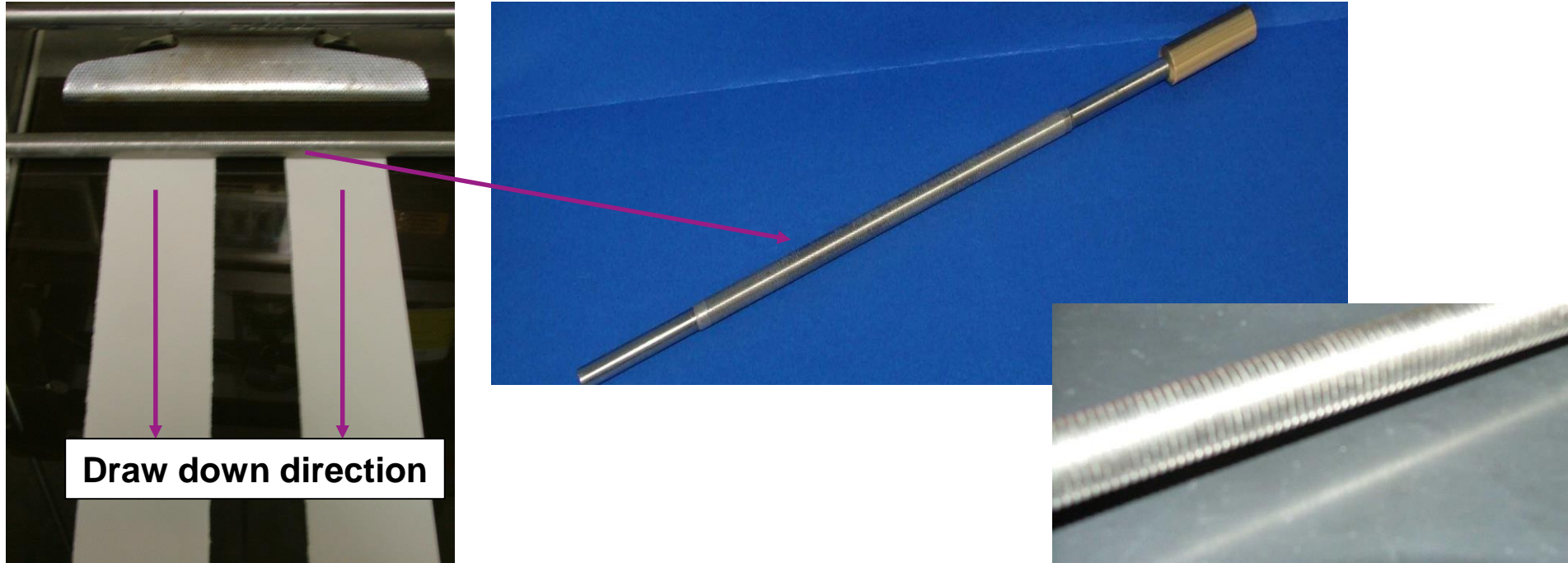
TEGO® Surten W 111

- Alcohol alcoxylate
- 100% active
- No foaming
- Enhanced penetration into the paper
- Nonylphenol ethoxylate-free

TEGOPREN® 5878

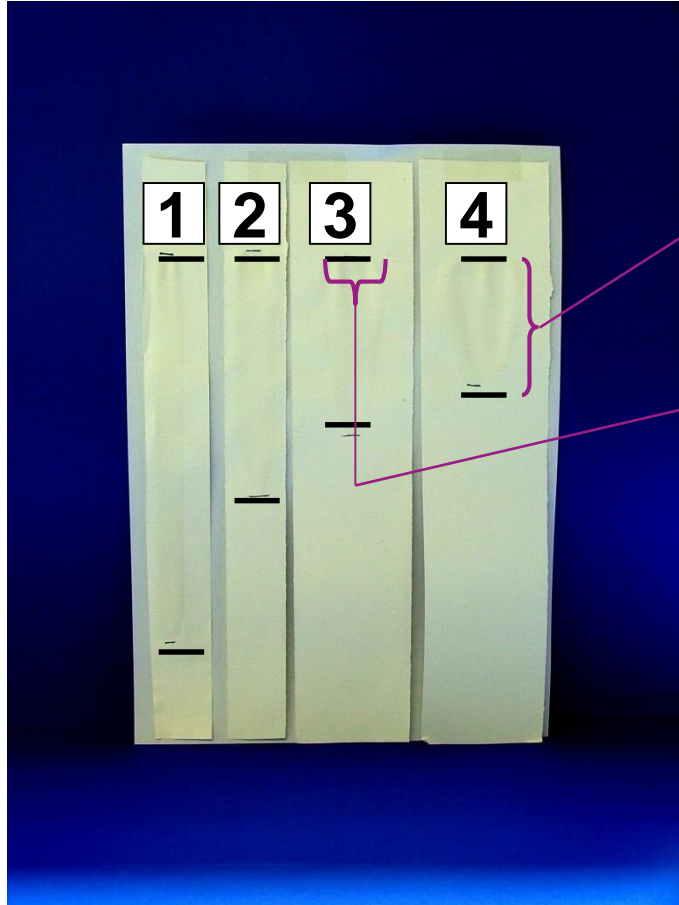
- Organomodified siloxane
- 100% active
- Low foaming
- Enhanced penetration into the paper
- Nonylphenol ethoxylate-free

Test Method / Wetting Behavior of Aminoresins on Paper



For each test two stripes are cut from one sheet of paper. For the measurement always a control without additive and one with the wetting agent is measured to ascertain comparable results. A drop with a defined volume is put on the paper and at once drawn down with our draw down machine. Then the length and width of the resin film is measured and noted down as difference compared to the control in % shorter (length) and % broader (width).

Test Setup & Performance of Wetting Agents



Determination of film length

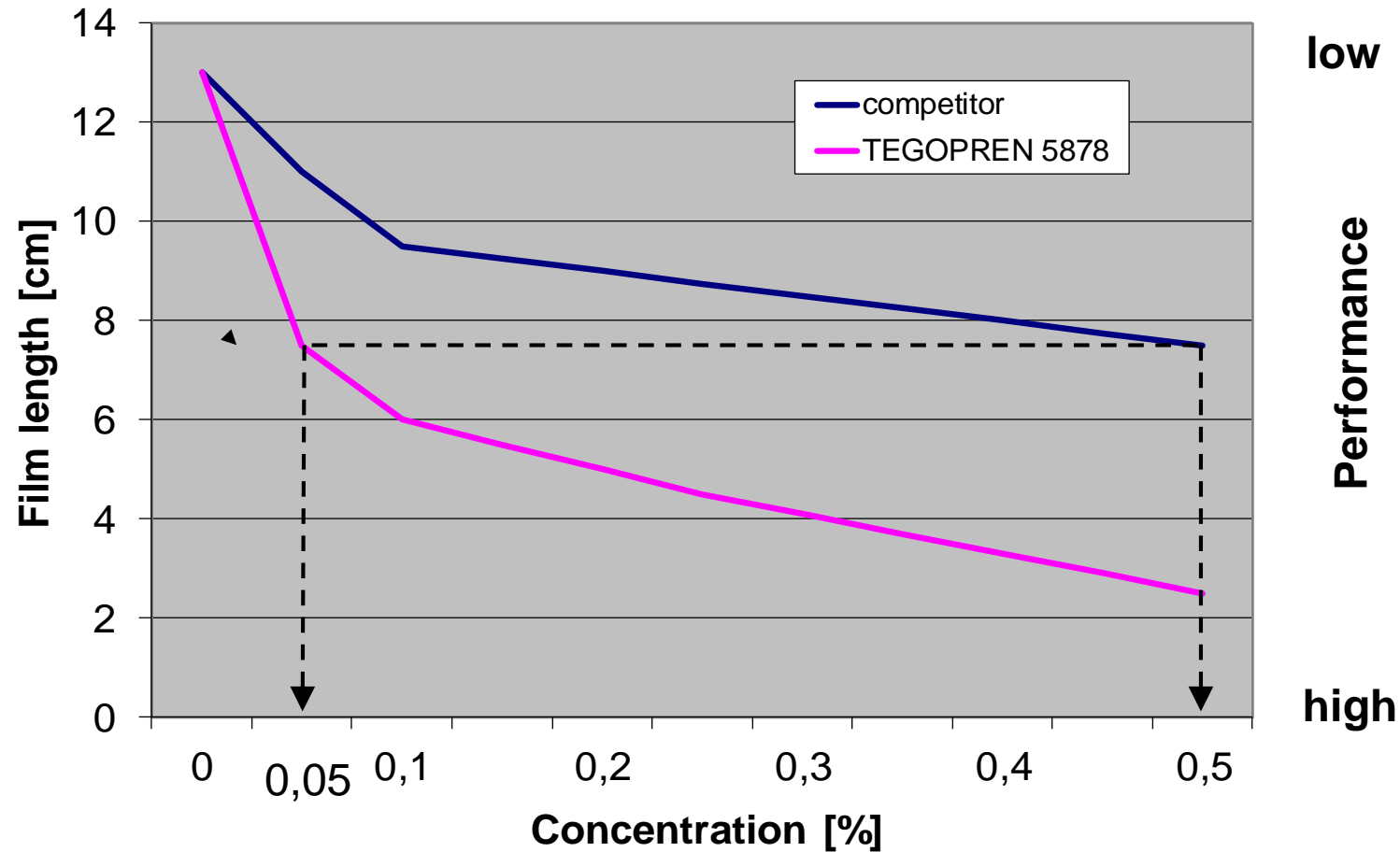
The shorter the film the faster does the resin penetrate into the paper

Determination of film width

The broader the film the better the penetration into the paper

1. Control without additive (powder resin + hardener)
2. Competitor, Octylphenoethoxylate
3. TEGO[®] Surten W 111
4. TEGOPREN[®] 5878

OMS are 10 Times as Effective as Standard Wetting Agents



Where are Antifoams used?

- **In Melamine resins for impregnation of decor paper and overlays**
- **In Phenolic resins for impregnation of Kraft paper**

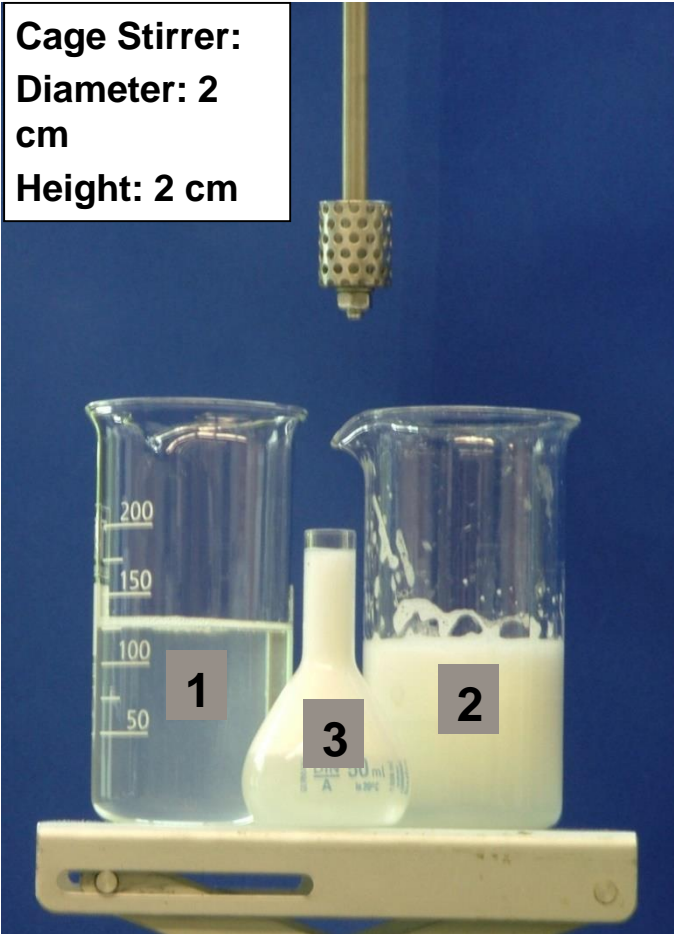
Antifoam for Impregnation of Decor Papers and Overlays

TEGO® Antifoam 2360

- Excellent antifoaming properties
- Especially designed for sensitive surfaces like Melamine or Polyurethane
- No surface defects
- Transparent films
- Easy to handle emulsion

Stirring Test for Foaming Behavior of Resin Formulations

Cage Stirrer:
Diameter: 2 cm
Height: 2 cm



How to run the test:

1. 160 ml resin + defoamer is poured into a 250 ml beaker
2. Stirring for 1 minute at 2500 rpm
3. Resin is poured into a 50 ml calibration flask
4. Weight is determined

Interpretation

High weight = few entrained air = good defoamer performance

Low weight = much entrained air = poor defoamer performance

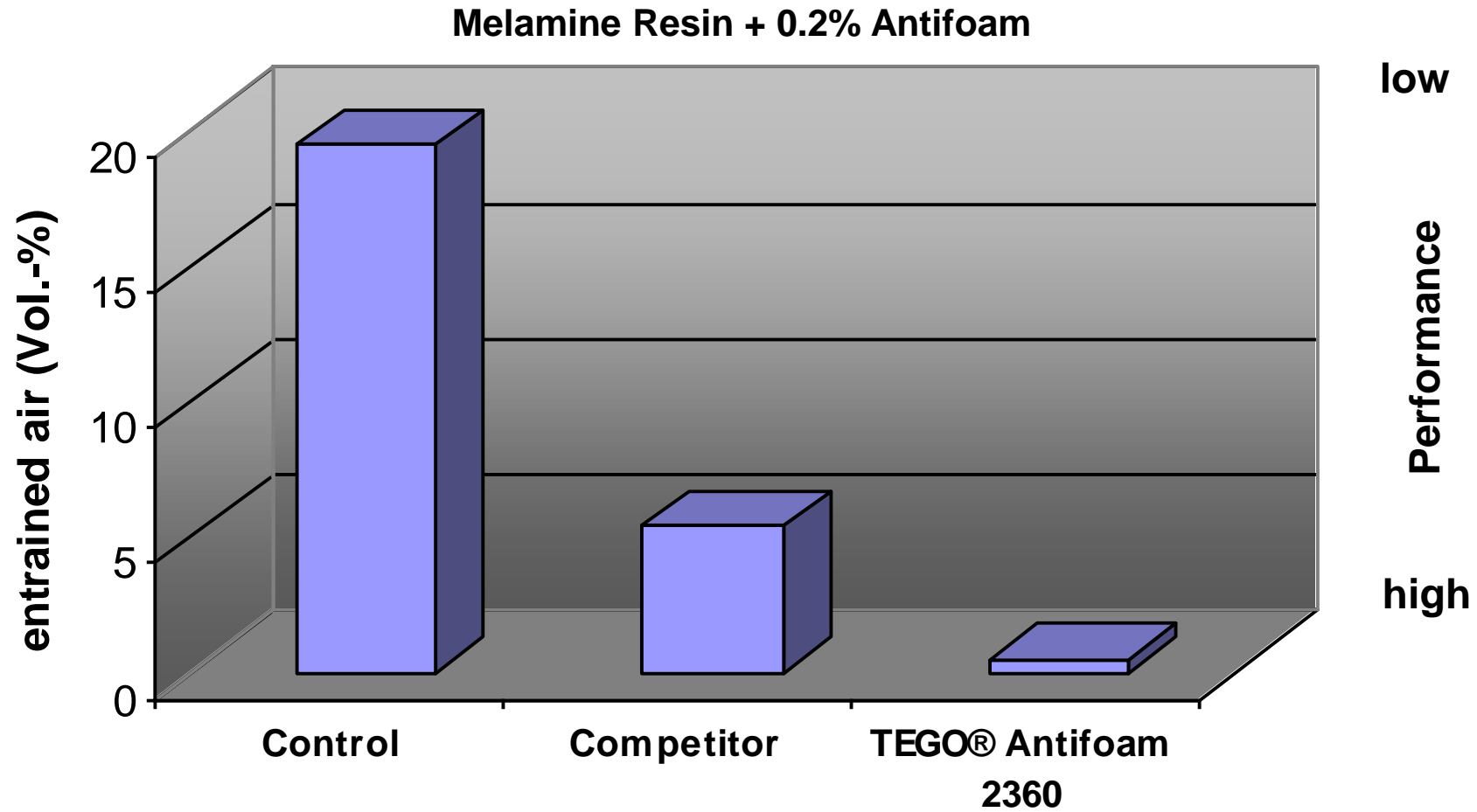
The amount of air can be calculated by using the following formula:

$$\text{Volume of air \%} = 100 - (g \cdot 2) / D$$

g = weight of 50 ml stirred resin; D = density of the air free resin

The stirrer must be completely covered with resin.

Antifoams / Results Stirring Test

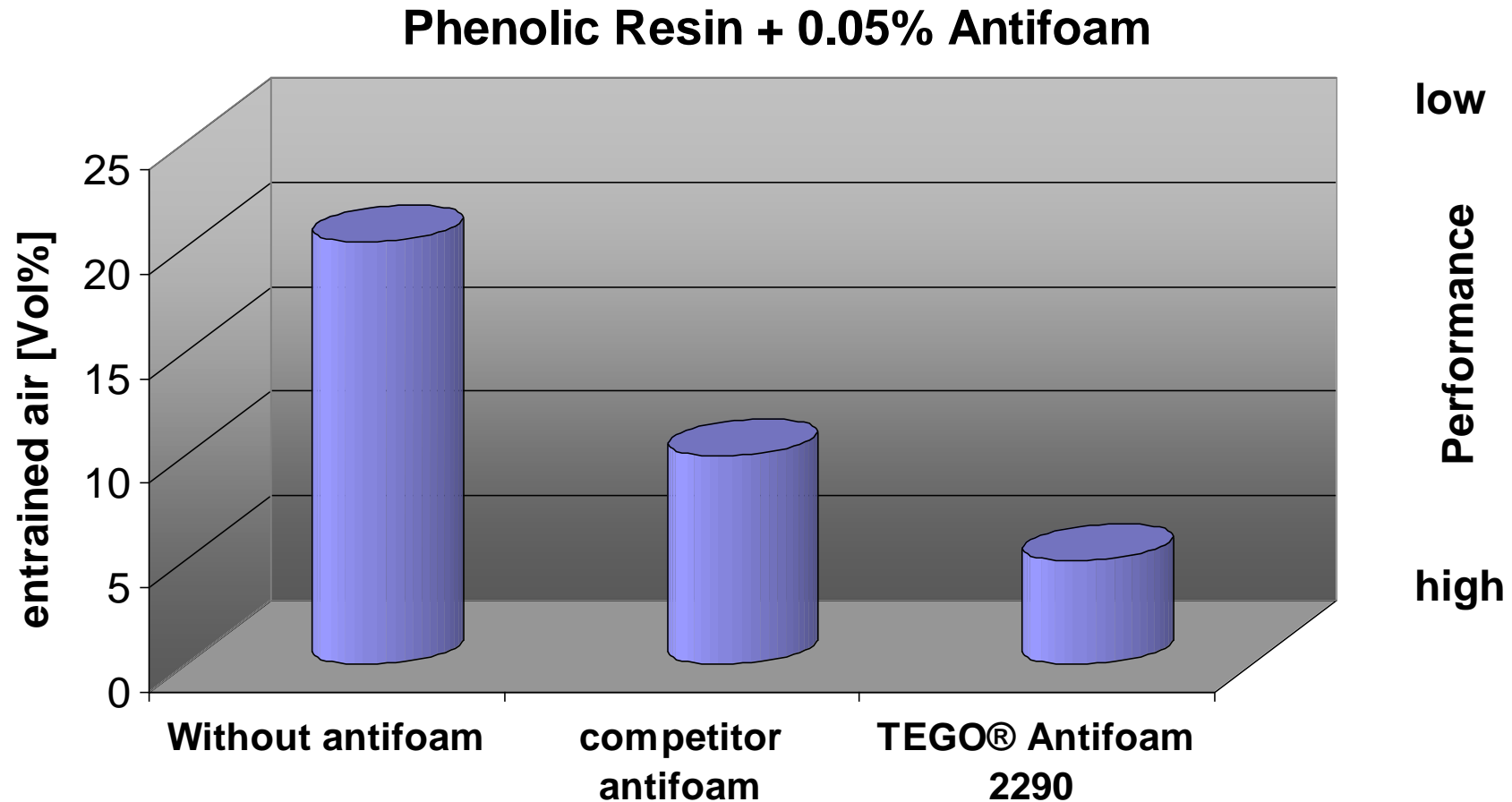


Antifoam for Phenolic Resins in the Impregnation of Kraft Paper

TEGO® Antifoam 2290

- High efficient antifoam
- Based on paraffinic oil and is completely silicone free
- Very compatible
- Self-emulsifiable antifoam concentrate
- Easy to use

Antifoams / Results Stirring Test



200 μm Films of Phenolic Resin on Glass

Without Antifoam



Competitor Antifoam



TEGO[®] Antifoam 2290



Antifoam dosage = 0,05 w%

TEGOMER® Dispersing Agents



Without TEGOMER® DA

In the production of single-colored surfaces the pigments may be dispersed in the resin bath.

Mainly this is done in the production of white surfaces by dispersing TiO₂ in the resin.

If the dispersion is not good enough, separation of the pigment will occur. These separations often build up hard layers in the resin bath and are not easy to remove.

TEGOMER® Dispensing Agents



With TEGOMER® DA

By adding TEGOMER® DA dispersing agents separations are avoided.

No hard layers are build up and cleaning of the impregnation bath is getting easier.

TEGOMER® Dispersing Agents

TEGOMER® DA 640

- Polyether phosphate
- Anionic
- 30% active content in water
- Solvent and Nonylphenol ethoxylate-free

TEGOMER® DA 850

- Organic modified polymer
- Nonionic
- 40% active content in water
- Solvent and nonylphenol ethoxylate-free

Additives for Paper Impregnation

Wetting Agents



TEGOPREN® 5878
TEGO® Surten W 111

Defoamer



TEGO® Antifoam 2360 for Melamine resins
TEGO® Antifoam 2290 for Phenolic resins

Dispersing Agents



TEGOMER® DA 640
TEGOMER® DA 850



EVONIK

Leading Beyond Chemistry