
Technical Information

TI/P 2641 e
November 1998 (DFC)

Supersedes edition dated August 1995

Relugan[®] GT 50

Relugan GT 24

® = Registered trademark of
BASF Aktiengesellschaft

Please file this leaflet in your "Wet End" binder,
Section 7

Aldehyde tanning agents for the leather and fur industry

Relugan GT 50 and Relugan GT 24 can be used in a wide variety of situations to improve the quality of leather. They can be used to make leather and fur skins fuller and softer without making them heavier. They also improve their washfastness and perspiration resistance.

Relugan GT 50, Relugan GT 24

Chemical nature

Aqueous solution of glutaraldehyde.

	Relugan GT 50	Relugan GT 24
Concentration	ca. 50.5%	ca. 24%
pH (undiluted)	ca. 3.7	ca. 3.7

The above figures are approximate. A detailed specification is available on request.

Storage

These products have a shelf life of six months at room temperature (25°C) in their tightly sealed original packaging. Drums should be tightly resealed each time material is taken from them, and their contents should be used up as soon as possible after they are opened.

Properties

Relugan GT 50 and Relugan GT 24 are supplied in the form of a pale yellow liquid that is soluble in water. They can take on a pale brown coloration if they are allowed to exceed their shelf life or stored at temperatures in excess of 25°C, and their aldehyde content can be lower when measured by titration. Their tanning action remains unaffected as long as they are still able to form a clear solution in water.

Relugan GT 50 and Relugan GT 24 have a pronounced tanning ability. The leather has a pale yellow coloration after it has been tanned and a shrinkage temperature of greater than 80°C. The tanning action of these products depends to a very large extent on the pH, as well as on the amount that is added, and the intensity of the tanning effect increases with higher alkalinity. These products begin to polymerize at a pH of greater than 9, especially at elevated temperatures.

Relugan GT 50 and Relugan GT 24 are compatible with pickling acids, neutral salts and mineral tanning agents, but compatibility problems can occur with phenolic tanning agents, amines, ammonium salts and sulphated fatliquors.

Relugan GT 50 and Relugan GT 24 give soft, full leathers with high washfastness and high perspiration resistance which can be dyed to level, intense shades. They are not suitable for use on white leathers because of the yellowing that they cause. We would recommend using Relugan GTW for white leathers.

Relugan GT 50 and Relugan GT 24 are supplied in the form of a pumpable, mobile solution. This allows them to be dispensed by means of automatic metering equipment, which prevents them from releasing their characteristic odour. Automatic metering also enables spillages to be prevented, and tannery personnel can be protected from coming into contact with the reactive aldehyde in the form of its aerosol.

Application

Relugan GT 50 and Relugan GT 24 can be used to obtain soft, full leathers with high washfastness and high perspiration resistance. They can be employed in the following processes:

- Pretanning and retanning vegetable-tanned leathers
- Wet white tanning
- Chrome tanning
- Retanning chrome-tanned leathers
- Tanning shrunken-grain leathers
- Chamois and combination chamois tanning

The information presented below refers to Relugan GT 50. It applies equally to Relugan GT 24, but the figures need to be adjusted to take its lower concentration into account.

Relugan GT 50 should be diluted with water at a ratio of 1:2–1:5 before it is applied.

Relugan GT 50 needs to be applied to the leather at a rate between 0.5% and 4%. A low pH (< 3.8) promotes penetration and gives a fine grain, but increasing the pH increases the affinity of the tanning agent for collagen fibres and helps to improve its exhaustion.

It is sufficient to add as little as ca. 0.5% expressed as a proportion of the pelt weight, or ca. 1% expressed as a proportion of the shaved weight, in order to bring about a significant improvement in the softness and fullness of the chrome-tanned leather, the fineness of the grain and the levelness of the shade. Up to 4% Relugan GT 50 needs to be applied to washfast and perspiration-resistant leathers, expressed as a proportion of the shaved weight.

It is sufficient to apply ca. 1% Relugan GT 50 to wet white, expressed as a proportion of the pelt weight. The best results can be obtained by using it in combination with polymeric tanning agents such as Relugan RF and syntans such as Basyntan® DLX.

The astringency of Relugan GT 50 depends to a large extent on the pH. The effects that can be obtained with Relugan GT 50 are determined by the prevailing pH at the point in the process at which it is applied. Relugan GT 50 can be applied to pelts at the pickling stage if it is used to retan vegetable-tanned leathers, chrome-tanned leathers, wet white or chamois leathers.

We would recommend adding it prior to the neutralization stage if it is used to retan chrome-tanned leathers. There is no need to wash the leather before it is neutralized, because the acid left over in the leather from chrome tanning can be used to adjust the pH. In high-exhaustion chrome tannages, we would recommend adjusting the pH by adding acid to the float before Relugan GT 50 is added. This ensures that the pH is low enough to prevent the aldehyde tanning agent from being fixed too early, which would cause excessive amounts to be deposited in the outer layers of the skin.

The high affinity of Relugan GT 50 for collagen fibres at a high pH can be taken advantage of in the production of shrunken-grain leathers. Some very interesting textures can be obtained with Relugan GT 50, especially if it is applied to the untanned pelts, but it also performs well if it is applied in retannages for wet blue.

Examples

1. Tannage for fancy bag hide

(Raw hide: split shoulders, 3–3.5 mm,
All percentages refer to the pelt weight.)

Delime and bate as usual, then rinse for 10 min. at 20°C

			Drain float	
	70	%	Water, 20°C	
	8	%	Common salt	10 min., 6.5–7°Bé
+	1.3–	1.5	% Formic acid, 85% (1:10, 20°C)	2 x 10 + 60 min., pH 3.0–3.5
+		1	% Relugan GT 50 (1:3, 20°C)	2 hours
+	4	–	5 % Basyntan RS3	3–4 hours
			Leave to stand in drum overnight if necessary	
			Final pH = 3.8–4.	
			Drain float.	

200 20°C

5 min

2. Pickle for chrome-tanned leathers

(All percentages refer to the split weight of the delimed pelts)

	40	%	Water, 20°C		
	4	%	Common salt	10 min.,	≥ 7°Bé
+	0.5	%	Formic acid, 85% (1:10, 20°C)	10 min.	
+	0.8	%	Sulphuric acid (1:10, 20°C)	120–180 min.	
+ 0.5–	1	%	Relugan GT 50 (1:3, 20°C)	30 min.	

Chrome tan as usual.a

3. Pretannage for wet white

(All percentages refer to the pelt weight)

Pickle the pelts briefly (pH of float = ca. 3.0) and then pretan them as follows in the same bath.

+	1	%	Relugan GT 50	} (1:3, 30°C)	5 min.
	2	%	Relugan RF		
+	1 –	2	Lipoderm® Liquor PSE (1:3, 30°C)	120 min.	
+	3	%	Basyntan DLX	60 min.	
+	0.5–	1	Sodium bicarbonate (1:10, 20°C)	3 x 10 min.	
+	100	%	Water, 28°C	10 min.	
			Drum for 5 min. each half hour on automatic overnight		pH ca. 4.0
			Horse up, sammy, shave, tan as required.		

4. Pretreatment for chrome-tanned leather prior to retannage

(All percentages refer to the shaved weight)

Do not rinse the wet blue in advance

	300	%	Water, 30°C		
	0.2	%	Formic acid, 85% (1:10, 20°C)	5 min.	
+	1.5	%	Relugan GT 50 (1:3, 20°C)	30 min.	
+	1	%	Sodium formate	10 min.	
+	0.7	%	Sodium bicarbonate	50 min.	

Short wash, process as usual.

5. Shrunken-grain effect (floaters) on wet blue

(Can be applied to leathers of all shaved thicknesses)

Please note: The effect only becomes visible after milling.

(All percentages refer to the shaved weight)

	300	%	Water, 35°C	10 min.
			Drain float	
	100	%	Water, 30°C	
	0.5	%	Sodium formate	10 min.
+	1	%	Sodium bicarbonate	
	1	%	Ammonium bicarbonate	30 min.
+	2	%	Tamol® GA	60 min., pH ca. 6.5
			Drain float	
	200	%	Water, 30°C	10 min.
			Drain float	
	100	%	Water, 30°C	
	1	%	Relugan GT 50 (1:5, 30°C)	10 min.
+	1	%	Relugan GT 50 (1:5, 30°C)	20 min., pH ca. 5.5
+	0.5	%	Formic acid, 85% (1:10, 20°C)	10 min., pH ca. 3.5
+	4	%	Mimosa	
	6	%	Basyntan DLE	10 min.
+	2	%	Luganil® Brown NR	
	2	%	Luganil Brown RL	50 min.
+	6	%	Lipoderm Liquor SLW (1:5, 50°C)	30 min.
+	2	%	Formic acid, 85% (1:10, 20°C)	2 x 15 min., pH ca. 3.6
			Drain float	
	300	%	Water, 50°C	20 min.
			Drain float	
	100	%	Water, 50°C	
	0.5	%	Luganil Brown NR	} (1:20, 60°C) 10 min.
	0.5	%	Luganil Brown RL	
+	3	%	Lipoderm Liquor SLW (1:5, 50°C)	5 min.
+	5	%	Lipoderm Liquor FP (1:5, 50°C)	50 min.
+	1	%	Formic acid, 85% (1:10, 20°C)	20 min., pH ca. 3.5

Horse up, set out, toggle wet (60°C)

Mill overnight **without moistening or staking**

Toggle loosely

6. Shrunken-grain tannage for pelts

(All percentages refer to the pelt weight)

Lime, delime and bate as usual for shrunken grain.

Drain/float

	20 %	Water, 20°C		
	6 %	Common salt		
	1.5 %	Lipoderm Liquor 1C (1:5, 30°C)	60 min.,	pH 8.1
+	2 %	Relugan GT 50 (1:5, 20°C)	1 min.,	pH 6.5
		Then immediately add		
+	1 %	Sodium bicarbonate (1:10, 20°C)	10 min.,	pH 7.7
+	2 %	Formic acid, 85% (1:10, 20°C)	90 min.	pH 3.6
+	8 %	Chromitan® MSN	Overnight,	pH 3.9

Final temperature = 40°C,
Horse up overnight, sammy, shave,
Process as usual for shrunken grain.

7. Pretreatment applied to chamois leather prior to tanning

(All percentages refer to the pelt weight)

Lime, delime and bate as usual for chamois leather, rinse, drain float.

	70 %	Water, 20°C		
	7 %	Common salt	10 min.,	≥ 7°Bé
+	1.5 %	Formic acid, 85% (1:10, 20°C)	120 min.	
+	1.5 %	Relugan GT 50 (1:3, 20°C)	90 min.	
+	2 %	Sodium formate	30 min.	
+	2 %	Ammonium bicarbonate	Overnight,	pH ca. 7

Sammy, shave if necessary, weigh,
tan as usual.

8. Tannage for hospital sheepskins

(Float length 1:20, expressed as a proportion of the dry weight)

Soak and wash thoroughly as usual.

	50	g/l	Common salt		
	3	g/l	Bascal® S		Overnight, 25°C
+	3	g/l	Formic acid, 85 % (1:10, 20°C)		Overnight
				Unload, leave to stand for 24 hours, centrifuge, new float	
5 -	50	g/l	Common salt		
	8	g/l	Relugan GT 50		
	5	g/l	Chromitan B or FM		60 min., 35°C
+	7	g/l	Lipoderm Liquor PN		
	3	g/l	Lipoderm Liquor PSE		120 min.
+	2	g/l	Sodium formate		Overnight
+	x	g/l	Sodium bicarbonate		4 hours, pH 4.2
				Unload, leave to stand for 24 hours, dry, process as usual.	

Further information on the BASF products mentioned in connection with Relugan GT 50 and Relugan GT 24 is given in the corresponding technical information leaflets.

The shades of our dyes and pigments are illustrated in special pocket shade cards.

Safety

When using these products, the information and advice given in our **Safety Data Sheets** should be observed. Due attention should also be given to the **precautions** necessary for handling chemicals.

Note

The information submitted in this publication is based on our current knowledge and experience. In view of the many factors that may affect processing and application, these data do not relieve processors of the responsibility of carrying out their own tests and experiments; neither do they imply any legally binding assurance of certain properties or of suitability for a specific purpose. It is the responsibility of those to whom we supply our products to ensure that any proprietary rights and existing laws and legislation are observed.