

ALOXICOLL® 31L

Standard Antiperspirant Active

INCI Name: Aluminumsesquichlorohydrate

Empirical Formula: $Al_2(OH)_yCl_z \times nH_2O$ ($z=1,1-1,3, y=6-z$)

Description

ALOXICOLL® 31L is a standard antiperspirant active. Its efficacy is due to the precipitation of basic Aluminium Chlorohydrate polymer complexes in the upper part of the sweat glands. These Aluminium Chlorohydrate polymers can be measured by HPLC. A typical HPLC trace for ALOXICOLL® 31L can be seen below, indicating the characteristic polymer distribution from band 1 to band 4.

Chemical Properties

Aqueous / alcoholic solutions of ALOXICOLL® are slightly acidic. At pH values > 5, insoluble $Al(OH)_3$ precipitates out. On drying, the residue decomposes to HCl and $Al(OH)_3$. On further heating, to temperatures >100°C, $Al(OH)_3$ releases water.

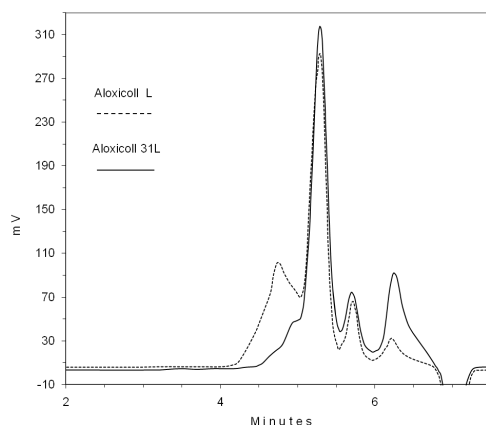
Physiological Properties

According to the application area and concentration applied, ALOXICOLL® exhibits sweat reducing, deodorant, astringent, antibacterial and antiphlogistic properties.

Application

ALOXICOLL® 31L is an antiperspirant active with a slightly higher efficacy than standard Aluminium Chlorohydrate solution, ALOXICOLL® L. It is primarily used in aqueous or aqueous/alcoholic formulations, e.g. in roll-ons and pump-sprays and can also be used in emulsions, pre-shaves and skin tonics.

ALOXICOLL® 31L forms clear solutions in formulations with alcohol concentrations up to 50% volume. Above this concentration, small quantities of $Al(OH)_3$ may precipitate out.



General Data

Form	approx. 50% solution
Aluminium	11,5 - 12,8 %
Chloride	8,4 - 11,2%
Al : Cl	1,5 - 1,8
Iron	max. 50 ppm
Heavy metals [as Pb]	max. 10 ppm
pH [15 % solution]	3,5 - 4,2



Raw Materials / Trade name	INCI name	w/w [%]
A. Demin. Water	Water (aqua)	29,80
Natrosol 250HHR (2)	Hydroxyethyl- cellulose	0,30
Ethylalcohol 96%	SD-Alcohol 39-C	30,00
Aloxicoll® 31L (1)	Aluminum Sesqui- chlorohydrate	37,50
B. Cremophor CO 40 (3)	PEG-40 Hydrogen- ated Castor Oil	0,80
Cremophor CO 455 (3)	PEG-40 Hydrogen- ated Castor Oil and Propylenglycol	0,80
Perfume		0,80

Raw Materials/ Trade name	INCI name	w/w [%]
Ethanol	SD Alcohol 39-C	64,00
Arlamol E (5)	PPG-15 Stearyl Ether	5,00
Aloxicoll® 31L (1)	Aluminum Sesqui- chlorohydrate	30,00
1,2-Propylen- glycol		1,00

Antiperspirant Roll on A 66

Procedure

Add Natrosol to the water while stirring. Stir for approx. 2 hours and then stop. The next day add ethyl alcohol and **Aloxicoll®** powder and mix carefully.

Mix the ingredients of part B and add to the prepared solution of part A under stirring. Continue stirring until a homogeneous mixture is formed.

Suppliers

- 1)BK Giulini
- 2)Herkules Inc.
- 3)BASF AG

Antiperspirant Pump Spray A 67

Procedure

Mix Ethanol, Propylene Glycol and Arlamol well while stirring. Finally, add **Aloxicoll®** under agitation.

Suppliers

- 1)BK Giulini
- 5)Uniquema

Safety

ALOXICOLL® 31L is an Aluminium Sesquichlorohydrate according to USP 36. The FDA Final Antiperspirant Monograph classifies ALOXICOLL® types under category 1, as safe and effective for use in all types of antiperspirant formulations.

Packaging

ALOXICOLL® 31L is available in 150 kg and 275 kg PE-drums or in 1000 kg and 1300 kg containers.

Storage

ALOXICOLL® types can be stored for more than 3 years in original, unopened containers. Once opened, the powders should be used quickly and contact with moisture should be avoided. ALOXICOLL® 31L solution should be protected from freezing, and storage at high temperatures should be avoided.

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