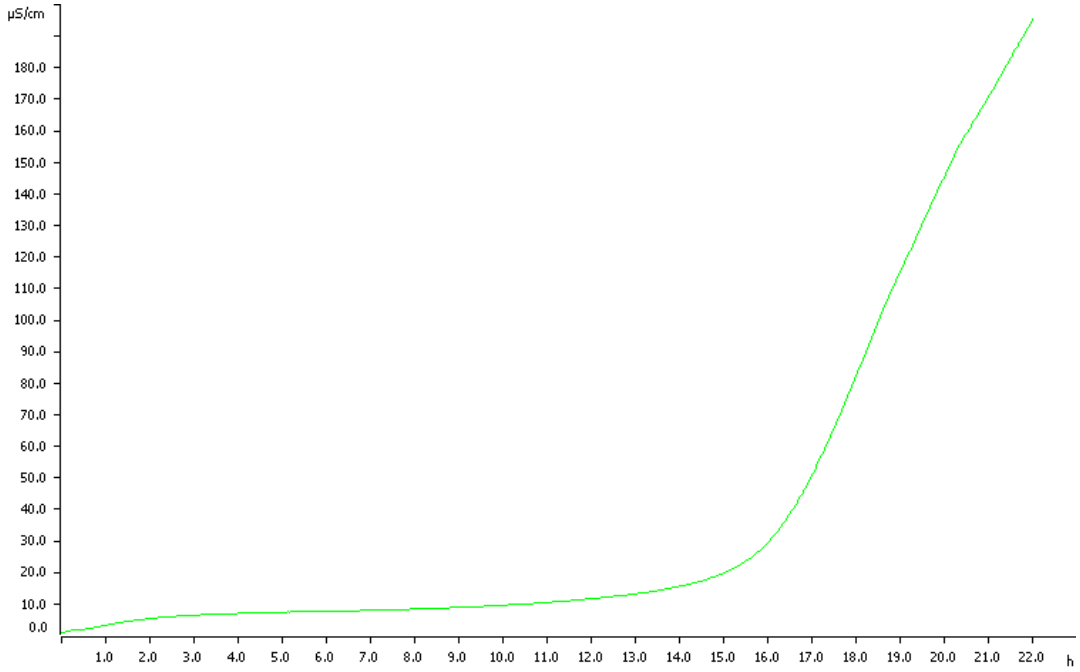
Stability Application Note R-019

Determination of the oxidation stability of lipstick and lip balm



Lipsticks and lip balms consist mainly of natural oils such as seed oils, palm oils or coconut oils. Many manufacturers additionally enhance their product with various vegetable fats, oils and wax. The purpose of these additives is to increase the perceived quality of the products. However, some of these oils and fats are capable to oxidize by autoxidation over time which affects the shelf life and therefore the quality of the products negatively.

A reproducible and accurate determination of the oxidation stability using the 892 Professional Rancimat can be realized.

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Method description

Samples

Lipstick – berry passion, based on castor oil

Lipstick – classic red, based on macadamia oil

Lip balm – care, based on capricylic/capric triglyceride

Lip balm – classic, based on capricylic/capric triglyceride

Sample preparation

No sample preparation is required.

Configuration

892 Professional Rancimat	2.892.0010
Equipment for the determination of the temperature correction	6.5616.100
Measuring vessel cover with built-in conductometric measuring cell	6.0913.130

Analysis

Before the analysis is started, a temperature correction for each used block of the 892 Rancimat is performed.

Particles are removed from inside and outside the reaction vessel by being blown out with a sharp stream of pressurized nitrogen. Then, 60 mL deionized water is added in each measuring vessel and placed together with the measuring vessel cover on the 892 Rancimat. The displayed conductivity must not exceed 10 µS/cm.

4.5 g ± 0.50 g lipstick or lip balm is weighed in the reaction vessel and the analysis is started.

Parameters

Sample size	4.5 ± 0.50 g
Measuring solution	60 mL
Temperature	160 °C
Temperature correction	auto
Gas flow (air)	20.0 L/h
Conductivity	300 µS/cm
Endpoint(s)	yes
Stop once all the criteria have been fulfilled	yes

Results

Sample	Mean value of the stability time / h	s(abs) / h	s(rel) / %
Lipstick – berry passion (n = 4)	4.24	0.05	1.1
Lipstick – classic red (n = 3)	1.25	0.04	3.1
Lip balm – care (n = 4)	24.06	0.69	2.9
Lip balm – classic (n = 4)	2.14	0.05	2.4

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