

Structure of Aluminum Chlorohydrate Gels with Antiperspirant functions

K. Mayumi^A, S. Masaoka^B, A. Morigaki^B,

^A*ISSP-NSL, Univ. of Tokyo*, ^B*Advanced Analytical Science Research Laboratories, Lion Corp.*

Aluminum chlorohydrate aqueous solutions are applied to antiperspirants because they form a gel at higher pH. Due to the gelation behavior, aluminum chlorohydrate aqueous solutions react with sweat and form a gel layer coating on our skin, which serves as a plug to suppress sweating.

In this work, we performed SANS measurements of the gel formed by aluminum chlorohydrate with antiperspirant functions at SANS-U. The sample was placed in a quartz cell with 2 mm thickness. The sample temperature was set at 25 °C using a Peltier cooling/heating system. The neutron wavelength was 7.0 Å, and the sample-to-detector distances were set to 16, 8, and 1 m. The scattered intensity was collected with a 128×128 pixel detector (model 2660N, Ordela). The background and cell scattering were subtracted from the data, and the scattered intensity was converted to the absolute intensity. The 2D scattering pattern was converted into a 1D scattering profile, $I(Q)$ vs. Q , by circular averaging.

Fig.1 shows the scattering profile $I(Q)$ of an aluminum chlorohydrate gel. The increase of the scattering intensity in the low- Q regime corresponds to network formation of aggregate in the aluminum chlorohydrate gel.

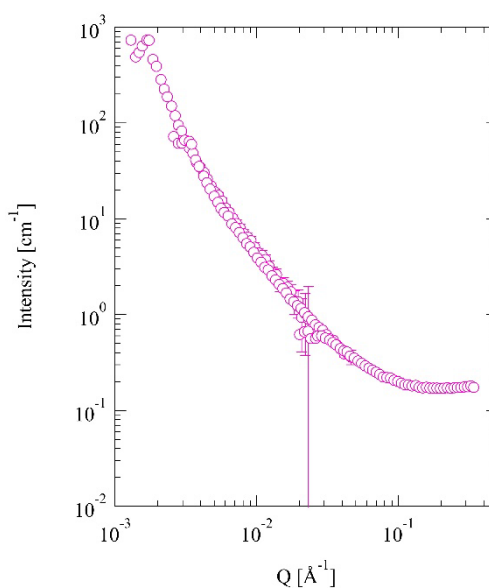


Fig. 1. SANS profile of an aluminum chlorohydrate gel.