Market Trend

Lotion application to disposable hygiene products has become more and more common in recent years as producers seek ways to differentiate products through value-added features and functionality. Lotion helps prevent and/or soothe irritated skin on wearers, whether babies or adults, and also improves comfort.

Application Description

Lotion reacts when it comes in contact with the skin and is warmed by body temperature. The lotion is not visible on the product under black light, but sometimes is to the human eye when viewed under normal light. Lotion is similar to cream or the ingredients of healing ointment and is typically applied like a hot melt adhesive on the inside of the topsheet material where it can come in contact with the skin. These materials require special equipment considerations to be successfully and reliably applied in production.

Benefits of the Application to Consumer/End User

- Reduced possibility of skin irritation.
- Improved comfort.
- Decreased risk of developing diaper rash.
- Provides relief if wearer is already experiencing skin irritation.
Why Use Nordson Equipment?

- Nordson’s experience and proven expertise in material delivery and high-speed dispensing as reflected in a large, global installed base of lotion applications on baby diaper and adult inco machines.
- Flexible system layouts adapt to current production layouts and can accommodate future requirements.

Typical Lotion Materials

Lotion materials from leading suppliers have been successfully tested for compatibility with the Nordson equipment solution. Additional materials are available from these and other suppliers and as such a list of tested materials is not comprehensive. The list will change as additional products are tested. Please consult material supplier websites for details regarding the availability of lotion materials.

Typical Application

Lotion patterns can consist of a varying number of stripes and spacing, and as such numerous patterns need to be accommodated. Production speeds are up to the current industry state-of-the-art 600 m/min with typical material add-on of 10-50 g/m². The applications are intermittent and the product specific pattern length and gap between patterns are accommodated by cycling the high-speed applicator modules (valves). The typical application length is approximately 200 mm for baby diapers.

Lotion material generally has a very low viscosity and some material may contain small particles, e.g., filled lotion. To accommodate both these requirements, modifications to VersaBlue® melters can be made as detailed below (Equipment Recommendation). Note that the material supplier’s Technical Data Sheet should be consulted for additional material-specific application guidance, e.g., application temperature. Application temperature is commonly in the 60-100°C range.

Nordson Equipment Recommendation

Melter

VersaBlue melter with optional modifications to run lotion material
- One or two high-precision pumps
- Typical holding capacity 25 or 50 liter
- Generally 0.2 mm filter screen with 85-bar safety valve
- Other melter options according to specific customer requirements
- Special sealing between low and high melt zones
- Over temperature protection (hardware & software), limiting temperature to 107°C
Material Filling with Top-loader or Splash-guard for More Precise, Controlled Filling

*Splash-guard is only available for melters up to 50 liter tanks

Material Filling with Agitator for Filled Lotions

**Heated Hose**
Lotion materials are compatible with standard Nordson 8 mm diameter hoses.

**Applicator and Nozzle**
*High-speed Slot (Contact Coating)*

Applicators and nozzles are purchased separately. In each case these are designed with special modifications to accommodate the commonly-available lotions and deliver reliable operation and long life. Applicators for example feature the Speed-Coat® Generation II abrasive-resistant module as well as an appropriately-sized filter mesh. Slot nozzles are designed with a special process air provision to assist in producing clean application.
Recommended Action

This document has been prepared to alert the field to an opportunity and to facilitate quoting of a Nordson solution. For system quotations or if you have additional questions about lotion application on disposable hygiene products, please contact your local sales representative.

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