CASE STUDY

Thermal Stability Meets Tactile Precision: A Hygiene Case Study with mBrace™

Customer

Global Personal Care and Hygiene Manufacturer

End Use

Nonwoven hygiene products such as diapers, wipes, liners, and gowns

Customer Challenge

A global hygiene manufacturer was facing serious processing disruptions on its spun-bond non-woven line due to a thermally unstable softness additive. At temperatures exceeding >240°C (464°F), the additive decomposed, causing residue buildup, frequent cleaning cycles, and unplanned downtime. These issues led to a 20% product loss across production runs. The customer needed a customizable softness solution that could maintain thermal integrity under high-temperature conditions without altering their existing processing setup or compromising product feel.

Americhem Solution

Americhem engineered a custom mBrace™ softening masterbatch specifically for PP spun bond nonwovens, delivering tunable tactile properties from silky and slick to cottony based on the end-user requirements. The solution maintained thermal stability at elevated processing temperatures, fully eliminating decomposition and outperforming traditional slip agents. The mBrace™ formulation also supported multi-functional integration, allowing the customer to combine softness with features such as hydrophilic, antimicrobial, antistatic, or hydrophobic performance. During production, it exhibited low volatility, a delayed bloom profile, and excellent spinnability enabling uninterrupted line operation, reduced plate-out, and fewer cleaning cycles.

Value Proposition

By switching to Americhem's mBrace™ softening masterbatch, the customer gained precise control over surface feel and softness tuning eliminating the thermal instability and residue issues caused by their previous additive. The new formulation enabled clean, uninterrupted processing, reducing downtime, scrap, and cleaning frequency.

mBrace™ also allowed for seamless integration of functional enhancements without compromising tactile quality. Additionally, Americhem supported the customer's sustainability goals with bio-sourced options available within the mBrace™ platform offering performance without trade-offs.

Key Outcomes

- Enhanced tactile control via optimized coefficient of friction
- Enabled multi-attribute functionality (e.g., hydrophilic, antistatic)
- Supported carbon reduction goals with bio-sourced alternatives
- Ensured batch-to-batch consistency for high-volume production

Fast Facts

End Application
Nonwoven hygiene products (diapers, wipes, liners, pads, gowns)

Customer Type
Global personal care brand with multi-region production

Materials Used
mBrace™ Softness Additive Masterbatches

Performance Requirements

- Tunable tactile feel (slick, silky, cottony)
- Thermal stability >240°C
- Compatibility with additives: hydrophilic, antistatic, antimicrobial

Color Standards
Custom color-matched to meet brand specifications

Americhem Capabilities

- Custom formulation & application-specific tuning
- Technical support across regions
- Global manufacturing footprint for supply assurance

Results
On-time SKU launch, consistent performance, reduced downtime, and enhanced process efficiency

2000 Americhem Way, Cuyahoga Falls, OH, 44221 USA Phone: +1.330.929.4213 | Web: www.Americhem.com