Product Description & Industrial Application Areas:

Mayer MT-HM 220 CapFix is a specialized, high-cohesion synthetic hot melt adhesive engineered for high-speed beverage, milk, and liquid food packaging lines (Tetra Pak, SIG Combibloc, Elopak, etc. brick/carton liquid boxes) for the permanent attachment and fixation of plastic caps, spouts, and closures.

1. Aseptic Liquid Carton Cap Fixation: Formulated for high-speed automatic cap applicators (Nordson, Robatech, Meler jetting systems) to attach plastic closures (flip-tops, screw caps) securely onto lacquered, printed, or PE-coated liquid cartons.

2. Straw Attachment: High-speed attachment of U-shaped or telescopic straws onto individual portion beverage and milk cartons without stringing or carton tear.

3. High-Speed Packaging & Case Sealing: Tray erecting, case sealing, and wrap-around packaging applications in the food and beverage industry requiring extreme cold-chain and high-temperature transit endurance.

Characteristics, Technical Advantages & Line Efficiency:

Exceptional Cohesion & High Torsion/Peeling Strength: Prevents cap detachment, delamination, or tearing when the consumer twists or flips the cap open for the first time. Forms a permanent molecular bond between rigid plastics (HDPE/PP) and coated paperboard.

Broad Temperature Performance (-20 °C to +70 °C): Non-brittle under refrigerated (+4 °C) and deep-freeze (-20 °C) conditions; eliminates cap pop-offs under hot summer logistics and shipping container transit (+65 °C / +70 °C).

Flawless Nozzle Atomization & Zero Stringing: Clean, string-free cutoff during high-speed dot or bead extrusion. Prevents nozzle build-up, dripping, and conveyor contamination, ensuring clean packaging appearance.

Outstanding Thermal Stability (Anti-Carbonization): Resists charring, gel formation, and thermal degradation in melting tanks, heated hoses, and nozzles during extended operational shifts, eliminating costly nozzle clogging.

FDA Indirect Food Contact Compliance: Complies with FDA 21 CFR 175.105 and EU Framework Regulation (EC) No 1935/2004. Odorless, neutral, and hygienic; preserves the pristine organoleptic properties of milk and beverages.

Processing Parameters & Operating Conditions:

Process / Application Parameter	Specification Value & Operating Conditions
Recommended Processing Temperature	140 – 170 °C (Optimal nozzle temperature: 155 – 165 °C)
Viscosity (Brookfield @ 140 °C, Spindle 21, ASTM D 3236)	8,640 ± 800 mPa·s
Viscosity (Brookfield @ 160 °C, Spindle 21, ASTM D 3236)	4,120 ± 400 mPa·s
Viscosity (Brookfield @ 180 °C, Spindle 21, ASTM D 3236)	2,410 ± 250 mPa·s
Setting Time Window (@ 20 °C)	1.5 – 3.0 seconds (Fast setting under line compression)
Open Time Window	4 – 7 seconds
Application Method	Automatic Hot Melt Applicator (Single Dot / Multi-Dot / Extrusion Bead)
Applicator Compatibility	Tetra Pak Cap Applicators, SIG Combibloc, Nordson, Robatech, Meler
Line Speed Capacity	6,000 – 24,000 packs / hour
Recommended Coat Weight	0.15 – 0.35 g / cap (Depending on closure base footprint)

Physical & Technical Specifications:

Technical Parameter	Test Method & Normative Value
Chemical Base	Synthetic Polymer / High-Cohesion Polyolefin & Resin Formulation
Softening Point (Ring & Ball, ASTM E 28-99)	116 ± 3 °C
Density (@ 20 °C, DIN 51757)	approx. 0.95 ± 0.02 g/cm³
Solids Content	100 % (Solvent-Free Solid Hot Melt Granulate)
Appearance & Color	Light Yellow / Off-White Homogeneous Granules
Heat Resistance (SAFT - Shear Adhesion Failure Temp)	approx. 75 – 80 °C
Cold Cleavage Resistance	-20 °C (Full bond integrity in cold-chain storage)
Food Safety Status (FDA Compliance)	Complies with FDA 21 CFR 175.105 for Indirect Food Contact
Flammability / Flash Point	Flash point > 250 °C (Solvent-free solid)

Performance Ratings & Quality Index:

Cap Peeling & Torsion Resistance (Cohesion)	**99 / 100**
High-Speed Line Capability (24,000 packs/hr)	**98 / 100**
Zero-Stringing & Clean Cutoff Performance	**99 / 100**
Cold & Heat Cycling Endurance (-20°C / +70°C)	**97 / 100**
Thermal Melt Stability & Anti-Charring	**98 / 100**

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ISO 9001:2015 / ISO 14001:2015 Certified Quality Management System
Mayer Industrial Adhesive Solutions Inc.

Surface Preparation & Applicator Operating Guidelines:

Substrate & Line Cleanliness: Paperboard surfaces must be dry, clean, and free of moisture condensation, dust, and excess static charge. Plastic cap bonding flanges must be free of silicone mold-release residues.

Nozzle Calibration & Pressure: Heated hose and nozzle temperatures must be verified with temperature probes. Glue dots must be dispensed accurately onto the carton target area or cap flange without splashing.

Compression Dwell Time: Maintain positive pressure for at least 0.5 – 1.0 seconds immediately following cap placement to ensure complete polymer bond consolidation before conveyor discharge.

Food Safety, Hygiene & FDA / EU Regulatory Compliance:

FDA 21 CFR 175.105 Compliance: Mayer MT-HM 220 CapFix meets the compositional requirements of the US Food and Drug Administration (FDA) 21 CFR 175.105 'Adhesives' for indirect food contact.

European Union Compliance: Fully compliant with European Framework Regulation (EC) No 1935/2004 on materials intended to come into contact with food and Regulation (EU) No 10/2011. Zero migration impact on beverage taste or aroma.

Cleaning & System Maintenance:

Scrape warm residues mechanically from applicator nozzles with wooden or brass spatulas. For adhesive changeover and scheduled system maintenance, purge equipment thoroughly with Mayer MT-CL 700 Cleaning Granules or Flushing Agent.

Storage Conditions & Shelf Life:

Store in original, unopened 25 kg PE bags in a clean, cool, and dry environment (+5 °C to +35 °C). Protect from direct sunlight (UV), heat radiators, and moisture condensation. Follow FIFO (First-In, First-Out) stock rotation. Shelf life is 24 months from manufacture date.

Packaging & Delivery Form:

Supplied in 25 kg Moisture-Barrier Polyethylene (PE) Bags (1000 kg stretch-wrapped pallets).

Important Safety Warnings & Legal Disclaimer:

Refer to the Material Safety Data Sheet (MSDS / SDS) for chemical handling and occupational health information. Molten hot melt causes severe thermal burns; wear protective heat-resistant gloves and safety eyewear.

Because carton varnishes, foil barriers, and plastic grades (HDPE/PP) differ across manufacturers, plant trials under actual production speeds are recommended prior to continuous commercial runs.

Mayer Adhesive Engineering & Quality Assurance Standards:

Quality Management: Manufactured in compliance with ISO 9001:2015 Quality and ISO 14001:2015 Environmental Management Systems.

Food Hygiene Standards: Produced under strict HACCP and GMP (Good Manufacturing Practice) hygiene standards.

Mayer Engineering Field Support: Expert technical consultation for applicator nozzle alignment, dot weight optimization, and cap torque testing.

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