NGC ESTER · FOR ADHESIVE MAKERS

Polyester polyols for PUR hot-melt adhesives

Crystalline, fast-set, amorphous and liquid polyester polyols to build reactive hot melts for wood, edgebanding, textiles, footwear, laminating and assembly. Supplied and supported in the UK and Europe by Next Generation Chemical.

CRYSTALLINE

Set and green strength

1,6-hexanediol and 1,4-butanediol adipates. They crystallise as the bond line cools, so the joint sets fast and holds early. Pick by MW: higher MW gives tougher, more elastic films.

AMORPHOUS

Tack and adhesion

Isophthalic/adipic polyester. Adds hot tack and green strength, and helps adhesion to polar substrates such as wood, paper and metal.

LIQUID

Open time and flexibility

Liquid and low-melt adipates. Give longer open time, a softer bond line and better adhesion to plastics. Also use in laminating adhesives.

How to build a reactive hot melt, in plain words

1

Pick the blend

Start with a crystalline grade as the largest part for set speed. Add an amorphous grade for tack and adhesion, and a liquid grade for open time and flexibility.

2

Melt and dry

Melt the polyesters together and dry under vacuum. Water reacts with MDI, so keep it as low as you can.

3

React with MDI

Add MDI at an OH:NCO ratio of about 1:2.2, so the prepolymer ends in free NCO groups. Pack it away from moisture.

4

Apply and cure

The hot melt sets on cooling as the crystalline part freezes, then cures with moisture in the air to its final strength and heat resistance.

General guidance only. Tune the blend and ratio on your own line, and trial before use.

Is your polyester supplier leaving the market?

Send us your current grade and TDS. We match OH value, viscosity, acid value and melting point, and send lab samples for your trial.

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Where PUR hot melts are used



Edge banding
Look at: NGC Ester 76930, 76630, 76135 HM



Profile wrapping
Look at: NGC Ester 76630, 76620, 76135, 74537 HM



Bookbinding
Look at: NGC Ester 76630, 76637, 76135 HM



Textile and interior lamination
Look at: NGC Ester 76617, 76612, 74537 HM

Illustrative images.

Price, packaging, lead time and REACH status confirmed with each quotation. Lab samples available for trials. Typical values, not a specification; confirmed on each TDS. All recommendations are made without warranty, since conditions of use are beyond our control. Always trial before use. October 2026.

Hot-melt grades and support grades

Typical values. Confirmed on each TDS. Melting points are approximate.

Grade and chemistry	OH value mg KOH/g	Acid max	Avg MW g/mol	Viscosity mPa·s at °C	State at 25 °C	Melting point or Tg	Role in the hot melt
Crystalline: set and green strength							
NGC Ester 76630 HM 1,6-hexanediol adipate	28–32	≤ 0.5	3,700	5,500 at 60	Solid (crystalline)	approx 55 °C	Main crystalline backbone; balanced open/set time; high green strength
NGC Ester 76620 HM 1,6-hexanediol adipate	18–22	≤ 1.0	5,600	16,500 at 70	Solid (crystalline)	approx 56 °C	Higher MW; tougher film; longer chains for flexibility
NGC Ester 76617 HM 1,6-hexanediol adipate	14–20	≤ 1.0	6,500	On request	Solid (crystalline)	approx 57 °C	High MW crystalline for textile and flexible bonds
NGC Ester 76612 HM 1,6-hexanediol adipate	10–16	≤ 1.0	8,500	On request	Solid (crystalline)	approx 57 °C	Highest MW crystalline; elastic bond lines
NGC Ester 76637 HM 1,6-hexanediol adipate	35–39	≤ 0.5	3,000	3,000 at 60	Solid (crystalline)	approx 55 °C	Lower MW crystalline; lower melt viscosity
NGC Ester 76656 HM 1,6-hexanediol adipate	53–59	≤ 0.5	2,000	1,100 at 60	Solid (crystalline)	approx 53 °C	Prepolymers; fast crystallising soft segment
NGC Ester 74445 HM 1,4-butanediol adipate	43–47	≤ 0.5	2,500	2,200 at 60	Solid (crystalline)	approx 55 °C	Contact and footwear adhesives; fast crystallisation
NGC Ester 74457 HM 1,4-butanediol adipate	54–58	≤ 0.5	2,000	1,400 at 60	Solid (crystalline)	approx 55 °C	Contact adhesives; TPU-type adhesives
NGC Ester 72235 HM Ethylene glycol adipate	33–37	≤ 0.5	3,200	3,500 at 60	Solid	approx 50 °C	Crystalline modifier
Crystalline, fast-set							
NGC Ester 76930 HM 1,6-hexanediol long-chain diacid polyester	28–32	≤ 0.5	3,750	2,400 at 80	Solid (highly crystalline)	approx 70 °C	Very fast setting; edgebanding and high line speed
Amorphous							
NGC Ester 76135 HM Isophthalic/adipic acid hexanediol polyester	33–37	≤ 0.5	3,200	7,600 at 60	Solid	Tg on TDS	Raises green strength and adhesion to polar substrates
Liquid and low-melt							
NGC Ester 74537 HM Butanediol/neopentyl glycol adipate	35–39	≤ 0.5	3,000	10,000 at 40	Liquid	Tg < −40 °C	Longer open time; flexibility; adhesion to plastics
NGC Ester 76535 HM Hexanediol/neopentyl glycol adipate	32–38	≤ 0.5	3,200	12,000 at 40	Paste/solid	Tg on TDS	Soft segment; open-time control
NGC Ester 71145 HM Diethylene glycol adipate	43–47	≤ 0.5	2,500	12,400 at 25	Liquid	Tg < −40 °C	Low-cost liquid soft segment; laminating adhesives
Support grades from the main range							
NGC Ester 72140B Aliphatic polyester	38–42	< 0.5	2,800	2,700–3,300 at 60	Liquid	On TDS	Liquid soft segment
NGC Ester 72156B Aliphatic polyester	50–55	< 0.5	2,250	1,350–1,650 at 60	—	On TDS	Adhesives and TPU-type adhesives
NGC Ester 72120B Aliphatic polyester	108–116	< 0.5	1,000	100–300 at 75	—	On TDS	Low MW; tack and hardness tuning
NGC Ester 74310NH Aliphatic polyester	106–118	< 1.0	1,200	500–800 at 75	—	On TDS	Coatings and adhesives; PUD

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