Claims

1. A semiaromatic copolyamide PA) comprising, in copolymerized form:

   a) 36 to 50 mol% of terephthalic acid,
   b) more than 0 to 14 mol% of isophthalic acid,
   c) 35 to 42.5 mol% of hexamethylenediamine,
   d) 7.5 to 15 mol% of at least one cyclic diamine, where the cyclic diamine d) comprises isophoronediamine or consists of isophoronediamine,

   where components a) to d) together add up to 100 mol%.

2. The copolyamide according to claim 1, which comprises terephthalic acid and isophthalic acid copolymerized in a molar ratio of less than 100: more than 0 to 80:20.

3. The copolyamide according to any of the preceding claims, which comprises hexamethylenediamine and at least one cyclic diamine copolymerized in a molar ratio of 75:25 to 85:15.

4. The copolyamide according to any of the preceding claims, which comprises hexamethylenediamine and isophoronediamine copolymerized in a molar ratio of 75:25 to 85:15.

5. The copolyamide according to any of the preceding claims, which has a glass transition temperature Tg_2 of at least 150°C.

6. The copolyamide according to any of the preceding claims, which has a heat of fusion ΔH_2 of at least 40 J/g.

7. A polyamide molding composition comprising at least one copolyamide as defined in any of claims 1 to 6.

8. The polyamide molding composition according to claim 7, comprising:

A) 25 to 100% by weight of at least one copolyamide as defined in any of claims 1 to 8,

B) 0 to 75% by weight of at least one filler and reinforcer,

C) 0 to 50% by weight of at least one additive,

where components A) to C) together add up to 100% by weight.

9. A molding produced from a polyamide molding composition according to either of claims 7 and 8.

10. The molding according to claim 9, in the form of or as part of a component for the automotive sector, especially selected from cylinder head covers, engine hoods, housings for charge air coolers, charge air cooler valves, intake pipes, intake manifolds, connectors, gears, fan impellers, cooling water tanks, housings or housing parts for heat exchangers, coolant coolers, charge air coolers, thermostats, water pumps, heating elements, securing parts.

11. The molding according to claim 9, in the form of or as part of an electrical or electronic component, especially selected from printed circuit boards and parts thereof, housing constituents, films, wires, switches, distributors, relays, resistors, capacitors, windings, lamps, diodes, LEDs, transistors, connectors, regulators, memory chips and sensors.

12. The use of a semiaromatic copolyamide as defined in any of claims 1 to 6 or of a molding composition as defined in either of claims 7 and 8 for production of electrical and electronic components and for high-temperature automotive applications.

13. The use according to claim 12 in soldering operations under lead-free conditions (lead free soldering), for production of plug connectors, microswitches, microbuttons and semiconductor components, especially reflector housings of light-emitting diodes (LEDs).