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Nanoparticles are being investigated by research scientists because of their wide variety of possible uses.

For example, silver nanoparticles are incorporated in footwear, paints, wound dressings, appliances, cosmetics, and plastics for their antibacterial properties.

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What are nanoparticles?

[2 marks]

Very tiny particles or 1 - 100 nm in size [1]

A few hundred atoms in size. [1]

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Cars use catalytic converters in order to reduce emission of harmful chemicals.

Modern catalytic converters contain nanoparticles of catalyst. Using nanoparticles reduces the cost of the catalytic converter.

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Suggest and explain why the use of nanoparticles of catalyst reduces the cost of the catalytic converter.

You should include information about the size and surface area of the particles.

[3 marks]

They have a large surface area [1]

So less of the catalyst needed [1]

Catalyst can be reused [1]

(Total 5 marks)

End