

Mark schemes

Q1.

- (a) to recycle (remaining) nitrogen and hydrogen
allow to recycle unreacted gases
allow to return nitrogen and hydrogen to the reactor

1

- (b) iron
allow Fe

1

- (c) (test)
 glowing splint

1

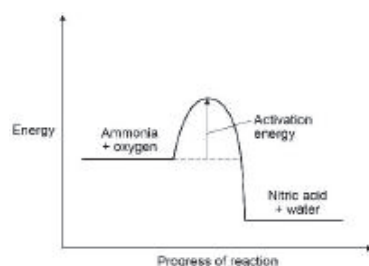
- (result)
 (splint) relights
MP2 is dependent upon MP1 being awarded

1

- (d) labelled vertical arrow from dotted line to peak
ignore arrow heads

1

ammonia **and** oxygen on left
and
 nitric acid **and** water on right
allow NH₃ for ammonia
allow O₂ for oxygen
allow HNO₃ for nitric acid
allow H₂O for water
an answer of



scores 2 marks

1

- (e) the line would reach a higher peak

1

- (f) fertilisers
allow explosives
allow sports injury packs

1

[8]

Q2.

(a) nitric acid

1

(b) (mass =) $\frac{40 \times 600}{800\,000}$

1

= 0.03 (kg/m²)

1

(c) (the scientist might be) biased

or

(there was) no peer review

allow the investigation was not repeated (by others)

1

(d) one / 1

1

(e) phosphorus

1

(d) formulation

1

[7]