Bleaching Agent

Q. Two gas show bleaching in water. one bleaching is permanent & other is temporary. Gas respectively are:-

(a) O_3, SO_2 (b) Cl_2, SO_3 (c) Cl_2, SO_2 (d) SO_2, Cl_2

wet P wet T

(e) SO_2, O_3

→ Colored substance → Fabric, wax, wool, vegetable, etc. → bleaching agent → colorless] — process is Bleaching.

bleaching agent → liberate → H → reduction

O → - oxidation - Generally

Abhishek

O_3 (Ozone)

→ $O_3 \longrightarrow O_2 + [O]$

[O] responsible for bleaching

[O] + colored → colorless.

→ Dry bleach, by oxidation & permanent.

H_2O_2

$H_2O_2 \longrightarrow H_2O + [O]$

[O] → colored → colored

- By oxidation
- Dry bleach
- → permanent

Cl_2

Q. How chlorine show bleaching action:-

(a) Cl (b) by O (c) H (d) No idea.

$Cl_2 + H_2O \longrightarrow HCl + HOCl$

HOCl → $HCl + [O]$

[O] → colored → colorless.

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→ By oxidation,
→ permanent
→ Wet bleach.

Bleaching powder ($CaOCl_2$)

$$CaOCl_2 + H_2O \longrightarrow Ca(OH)_2 + HOCl$$

$$HOCl \rightarrow HCl + [O]$$

[O] → colored → colorless.

→ By oxidation
→ permanent
→ wet bleach

SO_2

$$SO_2 + H_2O \longrightarrow H_2SO_3 \xrightarrow{H_2O_2} H_2SO_4 + [2H]$$

$$[H] + \text{colored} \rightarrow \text{colorless}. \xrightarrow{air} \text{color}.$$

→ By reduction
→ Wet bleach
→ Temporary. [only].

Q. Which is dry bleach?

(a) O_3 (b) SO_2 (c) Cl_2 (d) All

Q. Color reappear on treatment with :-

(a) Heat (b) Light (c) H_2O (d) Air

Conclusion:-

permanent	temporary
O_3, Cl_2, $CaOCl_2$, H_2O_2	SO_2.

Wet	dry
Cl_2, $CaOCl_2$, SO_2, [O], [redacted]	O_3, [redacted]. H_2O_2.

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