

Specification of Regenerants for Ion Exchange Resins

Sr. No.	Specification for
1	H₂SO₄
2	HCl
3	NaOH
4	NaCl

Specification for H₂SO₄:

Sr. No.	Parameters	Recommended Level
1	Total acidity(as H ₂ SO ₄) % Wt.(Min.)	95
2	Iron (as Fe), ppm (Max.)	30 ppm
3	Oxidizable impurities (as SO ₂), % Wt. (Max.)	0.02
4	Chloride (as Cl), % Wt. (Max.)	0.001
5	Arsenic (As), ppm (Max.)	1.2 ppm
6	Other heavy metals (as Pb), ppm (Max.)	10 ppm
7	Nitrates, nitrites and ammonia (as N), % Wt. (Max.)	0.003
8	Suspended matter as turbidity	~ 0
9	Inhibitors	None

Note:

Above specifications closely match standard specification of H₂SO₄ as per IS 266: 1993 under the category of Battery Grade or Chemically Pure Grade

Specification for HCl:

Sr. No	Parameters	Recommended Level
1	Total acidity(as HCL), % Wt. (Min.)	30
2	Iron (as Fe), ppm, (Max.)	20 ppm
3	Free Chlorine and Bromine (as Cl ₂), ppm, (Max.)	5 ppm
4	Sulphates (as H ₂ SO ₄), % Wt. (Max.)	0.1
5	Sulphites (as SO ₄), % Wt. (Max.)	0.05
6	Heavy metals (as Pb), ppm, (Max.)	20 ppm
7	Arsenic (as As), ppm, (Max.)	5 ppm
8	Suspended matter as turbidity	~ 0
9	Inhibitors	None

Note: Above specifications closely match standard specification of HCl as per IS 265: 1993 under the category of Boiler water grade (BW)

Specification for NaOH:

Sr. No	Parameters	Recommended Level
1	Sodium hydroxide (as NaOH) % Wt. (Min.)	99.50
2	Sodium carbonate (as Na ₂ CO ₃) % Wt. (Max.)	0.4
3	Chloride (as NaCl), % Wt. (Max.)	0.10
4	Sulphates (as Na ₂ SO ₄), % Wt. (Max.)	0.10
5	Silicates (as SiO ₂), % Wt. (Max.)	0.02
6	Iron (as Fe), ppm, (Max.)	20
7	Heavy Metals (as Pb), ppm (Max.)	5 ppm
8	Chlorates and per-chlorates (as NaClO ₃), ppm, (Max.)	10
9	Matter insoluble in water, % Wt. (Max.)	0.05
10	Suspended matter as turbidity	~ 0
11	Inhibitors	None

Note: Above specifications closely match standard specification of NaOH as per IS 252: 1991 under the category of pure grade

Specification for NaCl:

Sr. No	Parameters	Recommended Level
1	Sodium chloride (as NaCl), % Wt. (Min.)	99.5
2	Matter insoluble in water, % Wt. (Max.)	0.05
3	Calcium salts (as Ca), % Wt. (Max.)	0.03
4	Magnesium salts (as Mg), % Wt. (Max.)	0.01
5	Sulphates (as SO ₄) % Wt. (Max.)	0.2
6	Iron compound (as Fe), ppm (Max.)	10
7	Suspended matter as turbidity	~ 0
8	Inhibitors	None

Note: Above specifications closely match standard specification of NaCl as per IS 797: 1982 under the category of Grade 1