



Preparing Sodium Chlorite Solutions From Technical Sodium Chlorite (Dry) Product

Introduction

Solutions of varying strengths may easily be prepared from Technical Sodium Chlorite (Dry) product. This Technical Data Sheet includes instructions and an example of how to calculate the proper quantities of components needed to prepare a 25% active sodium chlorite solution. Data necessary to prepare solutions of other strengths is presented in Table 1.

Consult the product label and the appropriate Material Safety Data Sheets (MSDS) before handling Technical Sodium Chlorite or the solutions prepared from it.

Preparing 25% Solutions from Dry Product

The following conversions will enable you to blend a 25% sodium chlorite solution from Technical Sodium Chlorite (dry) product.

To determine the amount of Technical Sodium Chlorite and water needed to prepare a specified number of gallons of 25% sodium chlorite solution you would follow the following steps:

Multiply the desired number of gallons of 25% sodium chlorite solution by the weight per gallon of a 25% sodium chlorite solution prepared from Technical Sodium Chlorite (dry) product (10.56 lbs./gal.). This gives you the total weight of the desired volume of sodium chlorite solution.

Multiply the total weight of the sodium chlorite solution by 25% to determine the weight of sodium chlorite required to prepare that solution, and then divide the sodium chlorite weight by 80% to determine the amount of Technical Sodium Chlorite dry product (80% NaClO₂ by wt.) required.

Now that you know the weight of Technical Sodium Chlorite dry product in the desired volume of 25% sodium chlorite solution, you just subtract that weight from the total solution weight to determine the weight of the water required to prepare the 25% solution. At 25°C (77°F), the weight of the water can be converted to gallons by dividing by 8.32 lbs./gal.

Example: How much Technical Sodium Chlorite dry product and water is required to prepare 50 gallons of 25% sodium chlorite solution?

$$50 \text{ gals.} \times 10.56 \text{ lbs./gal.} = 528. \text{ lbs.}$$

$$528. \text{ lbs.} \times 0.25 = 132. \text{ lbs. of sodium chlorite required to prepare 50 gallons of 25\% active sodium chlorite solution.}$$

$$132. \text{ lbs. NaClO}_2 \div 0.8 = 165. \text{ lbs. of OxyChem Technical Sodium Chlorite dry product required to prepare the desired volume of 25\% sodium chlorite solution.}$$

$$528. \text{ lbs.} - 165. \text{ lbs.} = 363. \text{ lbs. of water required to prepare 50 gallons of 25\% sodium chlorite solution.}$$

$$363. \text{ lbs.} \div 8.32 = 43.63 \text{ gallons of water required to prepare the 50 gallons of 25\% sodium chlorite solution.}$$

Sodium Chlorite Solutioning Instructions:

Water needs to be between 100 and 120°F.

Mix as you add the 80% Technical Sodium Chlorite dry product.

Add sodium chlorite in free flowing flake form.

Mix for 30 minutes and sample to verify proper strength.

Allow solution to cool, then drum.

Table 1 gives the quantities of components required to prepare 100 gallons of the indicated solutions from Dry (80% Active) Sodium Chlorite. All solution strengths are expressed as the percentage of active sodium chlorite present in the final solution.

This table is based on the calculations presented in the previous example, and on the measured densities of sodium chlorite solutions prepared from dry product. All liquid temperatures are assumed to be 25°C (77°F).

**Table 1
Components Required to Produce 100 Gallons of
Sodium Chlorite Solution from Dry Product**

Solution Strength, Wt%	Solution Specific Gravity 25/25°C	Pounds per 100 gallons	Pounds Technical Dry NaClO₂	Pounds Water	Gallons Water
2	1.01	844	21.1	822.9	98.9
3	1.02	852	32.0	820.5	98.6
4	1.03	861	43.0	817.9	98.3
5	1.04	870	54.3	815.2	98.0
6	1.06	878	65.9	812.3	97.6
7	1.07	887	77.6	809.3	97.3
8	1.08	896	89.6	806.1	96.9
9	1.09	904	101.8	802.7	96.5
10	1.10	913	114.2	799.3	96.1
11	1.11	922	126.8	795.6	95.6
12	1.12	932	139.7	791.8	95.2
13	1.13	941	152.9	787.8	94.7
14	1.14	950	166.2	783.6	94.2
15	1.15	959	179.8	779.3	93.7
16	1.16	969	193.7	774.8	93.1
17	1.18	978	207.8	770.2	92.6
18	1.19	987	222.2	765.3	92.0
19	1.20	997	236.8	760.3	91.4
20	1.21	1007	251.7	755.0	90.7
21	1.22	1016	266.8	749.6	90.1
22	1.23	1026	282.2	744.0	89.4
23	1.25	1036	297.9	738.2	88.7
24	1.26	1046	313.8	732.3	88.0
25	1.27	1056	330.0	726.1	87.3
26	1.28	1066	346.5	719.7	86.5
27	1.29	1076	363.3	713.1	85.7
28	1.31	1087	380.3	706.3	84.9
29	1.32	1097	397.6	699.3	84.0
30	1.33	1107	415.2	692.1	83.2
31	1.34	1118	433.1	684.6	82.3
32	1.36	1128	451.3	677.0	81.4
33	1.37	1139	469.8	669.1	80.4
35	1.39	1160	507.6	652.7	78.4
37	1.42	1182	546.7	635.3	76.4
38	1.43	1193	566.7	626.3	75.3
39	1.45	1204	587.0	617.1	74.2
40	1.46	1215	607.6	607.6	73.0

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