Preparing Sodium Chlorite Solutions From Technical Sodium Chlorite (Dry) Product Using Metric Units

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 liters of 25% sodium chlorite solution you would follow the following steps:

Multiply the desired number of liters of 25% sodium chlorite solution by the weight per liter of a 25% sodium chlorite solution prepared from Technical Sodium Chlorite (dry) product (10.56 Kg/L). 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% $NaClO_2$ 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.

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

50 L X 1.269 Kg/L = 63.45 Kg

63.45 Kg X 0.25 = 15.86 Kg of sodium chlorite required to prepare 50 liters of 25% active sodium chlorite solution.

15.865 Kg $NaClO_2$ ÷ 0.8 = 19.83 Kg of OxyChem Technical Sodium Chlorite dry product required to prepare the desired volume of 25% sodium chlorite solution.

63.45 Kg – 19.83 Kg = 43.62 Kg (liters) of water required to prepare 50 liters of 25% sodium chlorite solution.

Sodium Chlorite Solutioning Instructions:
Water needs to be between 35 and 50°C.

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 liters 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 Liters of Sodium Chlorite Solution from Dry Product

Solution Strength, Wt%	Solution Specific Gravity 25/25°C	Kilograms Per 100 Liters	Kilograms Technical Dry $NaClO_2$	Kilograms Water (Liters)
2	1.01	101.4	2.54	98.90
3	1.02	102.4	3.84	98.61
4	1.03	103.5	5.17	98.30
5	1.04	104.5	6.53	97.97
6	1.06	105.5	7.92	97.62
7	1.07	106.6	9.33	97.26
8	1.08	107.6	10.76	96.88
9	1.09	108.7	12.23	96.47
10	1.10	109.8	13.72	96.05
11	1.11	110.9	15.24	95.62
12	1.12	111.9	16.79	95.16
13	1.13	113.0	18.37	94.68
14	1.14	114.2	19.98	94.18
15	1.15	115.3	21.61	93.66
16	1.16	116.4	23.28	93.12
17	1.18	117.5	24.98	92.56
18	1.19	118.7	26.70	91.97
19	1.20	119.8	28.46	91.37
20	1.21	121.0	30.25	90.74
21	1.22	122.2	32.07	90.09
22	1.23	123.3	33.92	89.42
23	1.25	124.5	35.80	88.72
24	1.26	125.7	37.72	88.00
25	1.27	126.9	39.66	87.26
26	1.28	128.1	41.64	86.49
27	1.29	129.4	43.66	85.70
28	1.31	130.6	45.71	84.88
29	1.32	131.8	47.79	84.04
30	1.33	133.1	49.90	83.17
31	1.34	134.3	52.05	82.28
32	1.36	135.6	54.24	81.36
33	1.37	136.9	56.46	80.41
35	1.39	139.4	61.01	78.44
37	1.42	142.1	65.70	76.36
38	1.43	143.4	68.10	75.27
39	1.45	144.7	70.54	74.16
40	1.46	146.0	73.02	73.02