

## CRYSTALLIZATION CURVE

A brine's true crystallization temperature (TCT) is the temperature at which salt crystals begin to fall out of solution given sufficient time and proper nucleating conditions (the presence of small angular particles that seed crystal formation). Once formed, masses of salt crystals are difficult to remove and can block the system.

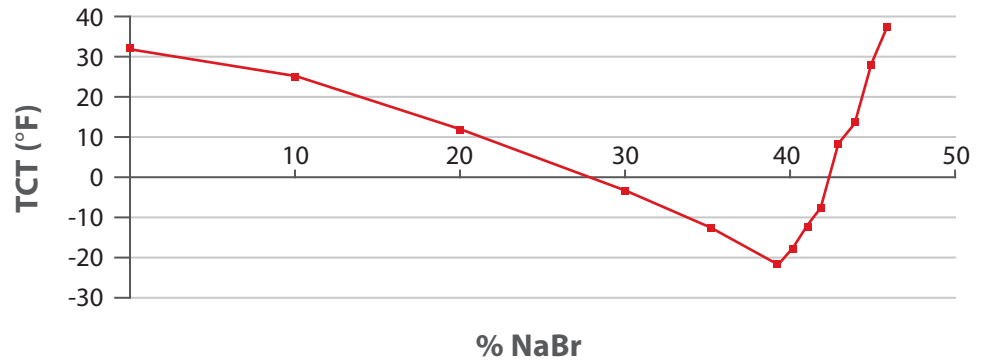
When the ambient temperature is very low and could reach the TCT for this material (about 28°F or -2°C), the solution should be diluted with water to avoid blockages, or should be stored in a heated environment.

**TABLE 1: CRYSTALLIZATION TEMPERATURES OF SODIUM BROMIDE SOLUTIONS**

NaBr %wt	Density lb/gal	Density g/cc	True Crystallization Temperature	
			TCT (°F)	TCT (°C)
0	8.35	1.00	32	0
10	9.01	1.08	25	-4
20	9.76	1.17	12	-11
30	10.68	1.28	-4	-20
35	11.27	1.35	-13	-25
39	11.68	1.40	-22	-30
40	11.77	1.41	-18	-28
41	11.93	1.43	-13	-25
42	12.02	1.44	-8	-22
43	12.18	1.46	7	-14
44	12.27	1.47	12	-11
45	12.43	1.49	28	-2
46	12.52	1.50	37	3



**TCT (AMERICAN UNITS)**  
**TCT (°F) versus % NaBr**



**TCT (METRIC UNITS)**  
**TCT (°C) versus % NaBr**

