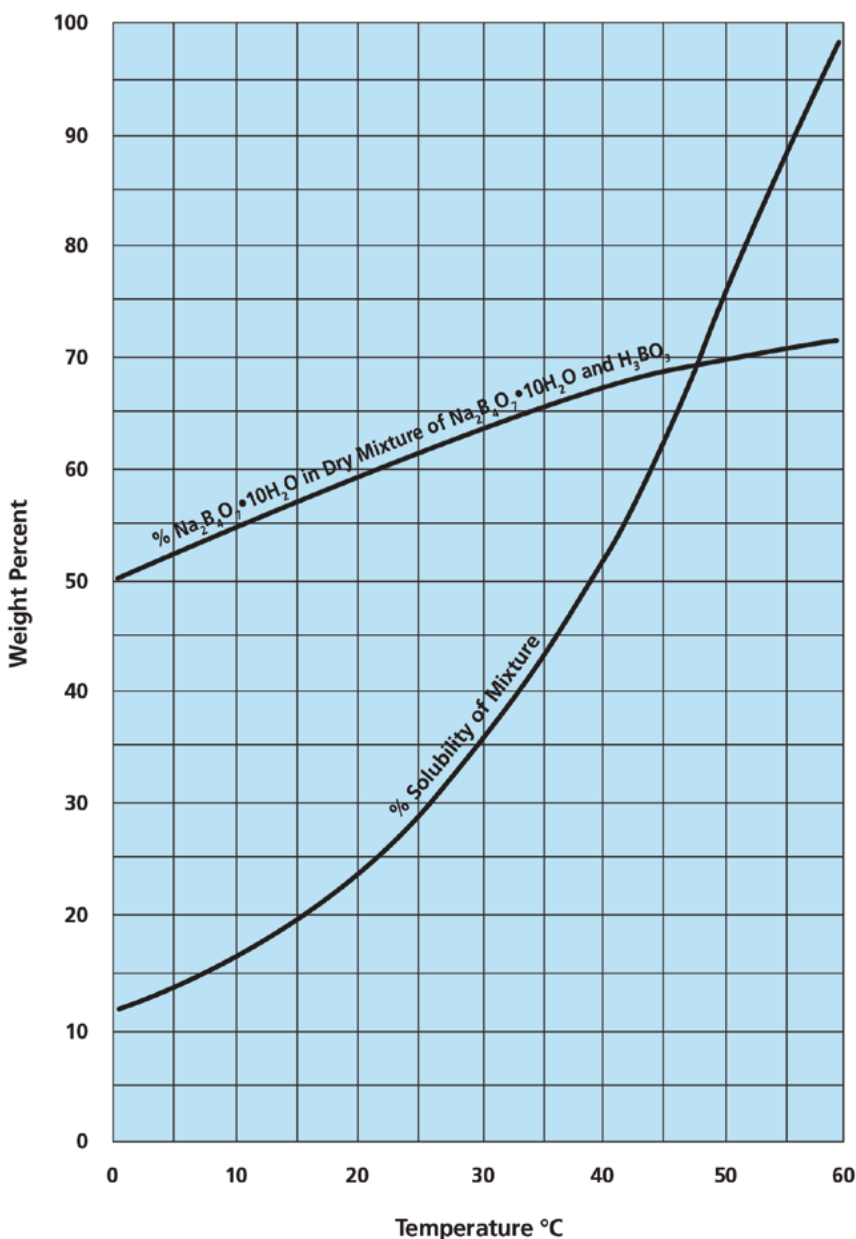


Borax (Borax 10 mol) and boric acid mixtures of maximum solubility

(Based on typical analysis)



Explanation

Example: To determine the solubility and composition of a mixture of Borax 10 mol and boric acid at 30°C. Proceed along the horizontal ordinate to 30°C. Read upward to the lower line labeled Percent Solubility of Mixture, and then across to where the vertical ordinate reads 36% by weight is given as the maximum solubility. To determine the ratio of the two components at this temperature and at this solubility, proceed along the horizontal ordinate to the 30° temperature as above and read upward to the top line which gives the composition of the mixture and then across where it can be read that this mixture contains 62.5% Borax 10 mol and 37.5% boric acid.

Composition of Borax (Borax 10 mol) and boric acid solid mixtures

(Based on typical analysis of technical grade products)

| Wt. % | | Mole Ratios | | Wt. % B ₂ O ₃ |
|-------|------------|---|--|-------------------------------------|
| Borax | Boric Acid | Na ₂ O/B ₂ O ₃ | B ₂ O ₃ /Na ₂ O | |
| 100 | 0 | 0.5000 | 2.0000 | 36.515 |
| 95 | 5 | 0.4625 | 2.1623 | 37.504 |
| 90 | 10 | 0.4269 | 2.3427 | 38.494 |
| 85 | 15 | 0.3931 | 2.5442 | 39.483 |
| 80 | 20 | 0.3609 | 2.7710 | 40.472 |
| 75.52 | 24.48 | 0.3333 | 3.0000 | 41.359 |
| 75 | 25 | 0.3302 | 3.0280 | 41.462 |
| 70 | 30 | 0.3010 | 3.3217 | 42.451 |
| 66.66 | 33.34 | 0.2823 | 3.5425 | 43.112 |
| 65 | 35 | 0.2732 | 3.6607 | 43.440 |
| 60.66 | 39.34 | 0.2500 | 4.0000 | 44.299 |
| 60 | 40 | 0.2465 | 4.0561 | 44.430 |
| 55 | 45 | 0.2211 | 4.5233 | 45.419 |
| 50.69 | 49.31 | 0.2000 | 5.0000 | 46.272 |
| 50 | 50 | 0.1967 | 5.0841 | 46.409 |
| 46 | 54 | 0.1779 | 56.204 | 47.200 |
| 45 | 55 | 0.1733 | 5.7694 | 47.398 |
| 43.54 | 56.46 | 0.1667 | 6.0000 | 47.687 |
| 40 | 60 | 0.1509 | 6.6261 | 48.387 |
| 35 | 65 | 0.1294 | 7.7276 | 49.377 |
| 33.34 | 66.66 | 0.1225 | 8.1663 | 49.705 |
| 30 | 70 | 0.1087 | 9.1962 | 50.366 |
| 25 | 75 | 0.08887 | 11.252 | 51.355 |
| 20 | 80 | 0.06975 | 14.336 | 52.345 |
| 15 | 85 | 0.05135 | 19.476 | 53.334 |
| 10 | 90 | 0.03361 | 29.757 | 54.323 |
| 5 | 95 | 0.01665 | 60.598 | 55.313 |
| 0 | 100 | 0.00000 | infinity | 56.302 |