

## Product Information

### CAPS

Sigma Prod. Nos. C2632 and C6070

Store at room temperature

**CAS NUMBER:** 1135-40-6

**SYNONYM:** 3-(cyclohexylamino)-1-propanesulfonic acid

### PHYSICAL DESCRIPTION:

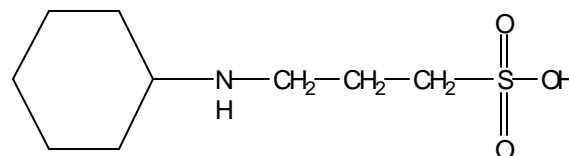
Appearance: white powder

Molecular formula:  $C_9H_{19}NO_3S$

Molecular weight: 221.3

$pK_a = 10.4$ ; Effective buffering range 9.7 to 11.1

$\Delta pK/\Delta T = -0.032^{1,2}$



### SOLUBILITY / SOLUTION STABILITY:

CAPS is very soluble in water.

### GENERAL REMARKS:

C2632 is the standard reagent grade; C6070, SigmaUltra, is tested for trace metals.

Although CAPS was not one of the original "Good" buffers, it has an analogous structure. Its optimum pH for buffering is pH 10.4, which makes it inappropriate for many physiological buffer applications. However, it was developed for the same reasons as the other propanesulfonic acids: high solubility in water, minimal reactivity with enzymes or proteins, minimal salt effects.<sup>3</sup>

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**REFERENCES:**

1. Sigma quality control.
2. Ellis, K.J. and Morrison, J.F., *Methods in Enzymology*, 87, 405-426 (1982). Note that *Methods in Enzymology*, 182, 27-28 (1990) has this value misprinted.
3. Ferguson, W.J., Good, N.E., et al., *Analytical Biochemistry*, 104, 300-310 (1980).

**SUGGESTED REFERENCES FOR FURTHER READING:**

*Enzyme Assays: A Practical Approach*, eds. Eisenthal and Danson (IRL Press, 1992), Chapter 11, p 317. Excellent discussion of buffer chemistry in clear terms.

*Data for Biochemical Research*, 3rd Ed., eds. Dawson, Elliott, et al., (Oxford Press, 1986). Contains pK tables for common buffers, recipes for mixing buffers.

*Molecular Cloning: A Laboratory Manual*, 2nd Ed., eds. Sambrook et al., (Cold Spring Harbor Press, 1989). Appendices contain recipes for many commonly used buffer formulations, particularly in molecular biology applications.

"Guide to Protein Purification" in *Methods in Enzymology*, 182, pp 24-38 (1990). Review article about buffers and their properties, particularly in protein isolation applications.

*Methods in Enzymology*, 87, 405 (1982). Review article about buffers, with emphasis on the mathematics of buffers and variables affecting ionic strength.

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