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## 2,3-Butanedione

(*Diacetyl*),  $\text{CH}_3\text{COCOCH}_3$  86.09 CAS RN<sup>®</sup>: 431-03-8.—Bright yellow to yellowish-green liquid. Soluble in water. Miscible with alcohol and with ether. Boils at about 88°.

### Assay

**Hydroxylamine hydrochloride solution:** Dissolve 20 g of hydroxylamine hydrochloride in 40 mL of water, and dilute with alcohol to 400 mL. Add, with stirring, 300 mL of 0.5 N alcoholic potassium hydroxide VS, and filter. Discard after 2 days.

**Procedure:** Transfer about 1 g, accurately weighed, to a glass-stoppered, 250-mL flask, add 75.0 mL of *Hydroxylamine hydrochloride solution*, and insert the stopper in the flask. Reflux the mixture for 1 hour, then cool to room temperature. Add bromophenol blue TS, and titrate with 0.5 N hydrochloric acid VS to a greenish-yellow endpoint.

[NOTE—Alternatively, the solution may be titrated potentiometrically to a pH of 3.4.]

Perform a blank test with the same quantities of reagent used for the test specimen, and make any necessary correction. Each mL of 0.5 N hydrochloric acid is equivalent to 43.05 mg of  $\text{CH}_3\text{COCOCH}_3$ . Not less than 97% of  $\text{CH}_3\text{COCOCH}_3$  is found.

**CONGEALING TEMPERATURE (651):** between -2.0° and -5.5°.

**REFRACTIVE INDEX (831):** between 1.3935 and 1.3965, at 20°.

**SPECIFIC GRAVITY (841):** about 0.98.

**Auxiliary Information** - Please [check for your question in the FAQs](#) before contacting USP.

Topic/Question	Contact	Expert Committee
2,3-BUTANEDIONE	<a href="#">Margareth R.C. Marques</a> Principal Scientific Liaison	HDQ Headquarters

### Most Recently Appeared In:

Pharmacopeial Forum: Volume No. Information currently unavailable

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