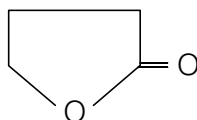


gamma-Butyrolactone

Technical Data Sheet

February 1997

Formula:..... C₄H₆O₂
Molecular Weight:..... 86.1
Product Number:
STD - Standard 584383
EL - Standard 556901
CAS Registry Number:..... 96-48-0



Description

gamma-Butyrolactone (GBL) is a colorless liquid free of suspended matter. It is miscible with water, alcohols, ketones, esters and aromatic hydrocarbons. Solubility is limited in aliphatic and cycloaliphatic hydrocarbons.

Safety

gamma-Butyrolactone (GBL) is a strong mucous membrane irritant, as well as a mild skin irritant.

GBL can penetrate the epidermis and cause rashes or eczema.

GBL has a slightly narcotic effect.

Always refer to the Material Safety Data Sheet (MSDS) for detailed information on safety.

Applications

GBL serves as a chemical intermediate in the manufacture of all pyrrolidones.

It can be used in the production of pesticides, herbicides and plant growth regulators.

GBL may be formed as an intermediate in the production of vitamins and pharmaceuticals.

As a solvent, GBL can be used in/with:

Product Specifications	STD Value	EL Value	Test Method
Assay, % minimum (sum of GBL and methyl derivatives)	99.7	99.9	STI8460
Water, % maximum	0.05	0.05	STI8432
Color, APHA maximum	20	10	STI8415
1,4-Butanediol, area % max.	0.10	0.10	STI8460
Acid, wt. % max. (calculated as butyric acid)	0.03	0.03	STI8461
Foreign matter	none	none	STI8412
THF, area % max.	—	0.05	
Acetal, area ppm max.	—	50	STI8460

EL - Electronic Grade meets additional specifications for the electronics industry. These include:

Chloride, wt. ppm max.	0.30
Sulfate, wt. ppm max.	1.00
Nitrate, wt. ppm max.	1.00
Iron, wt. ppm max.	0.05
Copper, wt. ppm max.	0.05
Zinc, wt. ppm max.	0.05
Lead, wt. ppm max.	0.05
Sodium, wt. ppm max.	0.50
Potassium, wt. ppm max.	0.50

Physical Properties

Melting point, °C	ca. - 43
Boiling range, °C	201 - 206
Density @ 20°C, g/cm ³	1.13
Flash point, °C	104

- pesticides
- photochemical etching
- electrolytes of small batteries or capacitors
- viscosity modifiers in polyurethanes
- surface etching of metal coated plastics
- organic paint disbursements for water soluble inks
- pH regulators in the dyeing of wool and polyamide fibers
- foundry chemistry as a catalyst during curing
- curing agents in many coating systems based on urethanes and amides

Packaging

Available in 4000 gallon minimum tank trucks and 507 lb. (net weight) and 557 lb. (gross weight) non-returnable steel drums.

Storage & Handling

gamma-Butyrolactone has an almost unlimited shelf life in unopened containers when properly stored in a protected storage area. This product is neither explosive nor spontaneously flammable in air. However, it is combustible. Materials recommended for storage tanks are carbon steel, stainless steel and nickel.

Always refer to the Material Safety Data Sheet (MSDS) for detailed information on handling and disposal.

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