



**TECHNICAL DATA SHEET**  
LITTLE FALLS PLANT – MN/US  
VERSION 1.0  
09/05/2025

**Generic Name:** RENEWABLE N-BUTANOL

**CAS Number:** 71-36-3

**EINECS Number:** 200-751-6

**SPECIFICATION:**

Product Specification	Limits	Method
Assay % (GC)	≥ 99.5%	GC-FID (Internal)
Appearance	Clear	ACS
Color APHA (Pt-Co)	≤ 10	ASTM D1209
Density @ 20° C	0.808 – 0.810 g/cm <sup>3</sup>	ASTM D4052
Residue after evaporation	≤ 2 mg/100 mL	ASTM D1353
Distillation Range (95% Recovery)	116 – 118 °C	ASTM D1078 or D86
Flash Point (Closed Cup)	≥ 35 °C	ASTM D93
Vapor Pressure @ 20 °C	~6.7 mmHg	ASTM D2879
Water (w/w)	≤ 0.30% w/w	ASTM E203 (Karl Fischer)

**PRODUCT DESCRIPTION/APPLICATION**

NUOL Renewable n-Butanol is a biologically derived, high-purity linear alcohol (1-butanol) produced through renewable fermentation pathways (ABE process). It is chemically identical to petrochemical “n-butanol”, offering a sustainable alternative without compromising performance or compatibility in industrial formulations.

This high-purity solvent is characterized by its moderate evaporation rate, low viscosity, and excellent solvency power for both polar and non-polar substances. NUOL Renewable n-Butanol is widely used across various sectors, including:

- Coatings and Paints: As a coalescing agent and flow modifier in water-based and solvent-based systems.
- Adhesives and Sealants: Improves wetting and open time in formulations.

- Plasticizers and Resins: Acts as a building block in the production of phthalates and other esters.
- Textiles: Used in dyeing processes and fiber finishing.
- Agrochemicals: As an inert carrier or solvent in formulations such as herbicides and pesticides.
- Cosmetics and Personal Care: Utilized in small concentrations as a solvent or viscosity modifier.

Thanks to its renewable origin, NUOL Renewable n-Butanol helps reduce the product carbon footprint (PCF) and supports circular economy goals and low-carbon supply chains. It is readily biodegradable and non-persistent in the environment, making it an ideal candidate for sustainable chemical formulations.

#### **HANDLING PRECAUTIONS:**

NUOL Renewable n-Butanol is a flammable liquid and should be handled with care to ensure the safety of personnel and facilities. Use only in well-ventilated areas or under appropriate fume extraction systems to avoid inhalation of vapors. Vapors may form explosive mixtures with air. Keep away from heat, sparks, open flames, and hot surfaces. No smoking. Wear suitable personal protective equipment (PPE), including gloves, goggles, and protective clothing as appropriate. In case of spills, eliminate all ignition sources. Use inert absorbent materials (e.g., vermiculite, sand) for containment. Clean with non-sparking tools and dispose of residues in accordance with local regulations.

Store in a cool, dry, well-ventilated area away from incompatible substances such as oxidizing agents, acids, and bases. Store in approved containers, properly labeled, and kept tightly sealed. Temperature control may be necessary to minimize vapor pressure and evaporation in warm climates.

#### **SHIPPING CLASSIFICATION**

NUOL Renewable n-Butanol is classified as a flammable liquid under global transport regulations and must be handled and transported in compliance with international hazardous materials guidelines. Ensure all packaging, labeling, and documentation conform to applicable standards:

- UN Number: UN 1120
- Proper Shipping Name: n-Butanol or n-Butyl Alcohol
- Transport Hazard Class: 3 (Flammable Liquid)
- Applicable Transport Regulations: ADR / IMDG / IATA / ICAO / DOT.

Use only certified containers and carriers authorized for flammable liquids. Ensure all documentation (shipping papers, SDS, labels) is current and compliant. Temperature-controlled transport may be necessary in hot climates to reduce vapor pressure and ensure safe handling. NUOL Renewable n-Butanol should be shipped only by trained personnel

familiar with the transport of hazardous goods. Always verify compatibility of containers with butanol to prevent corrosion or permeation.

### **REGULATORY STATUS**

The components of this material are listed on the U.S. TSCA Inventory, the Canadian Domestic Substance List (DSL) and the European Union REACH.

NUOL Renewable n-Butanol (CAS No. 71-36-3) is chemically identical to petroleum-derived n-Butanol and is subject to the same regulatory frameworks. It complies with key global chemical regulations and may be used in both industrial and consumer applications, depending on local authorization.

#### **Chemical Identification:**

- Substance Name: Renewable n-Butanol
- CAS Number: 71-36-3 // EC Number (EINECS): 200-751-6
- Molecular Formula: C<sub>4</sub>H<sub>10</sub>O

#### **Classification & Labeling (GHS/CLP):**

- Hazard Class: Flammable Liquid – Category 3
- Eye Irritation: Category 2A
- Signal Word: Warning

Not listed as a carcinogen by IARC, NTP, or OSHA. FDA (USA): May be used indirectly in food packaging adhesives under CFR 21 175.105

### **DELIVERY FORM**

NUOL Renewable n-Butanol is supplied in various packaging formats designed to accommodate a wide range of industrial needs, from laboratory-scale applications to bulk-scale manufacturing. The product is delivered as a clear, colorless liquid with a mild characteristic odor, under tightly controlled filling and storage conditions to ensure consistent quality and purity. Packaging options are designed to meet a variety of industrial requirements, ensuring product integrity, safety, and convenience throughout the supply chain. Liquid in road tanker, rail tank wagon, IBC-container or 200-liter net in steel drums.

Store in a well-ventilated, cool, and dry area, away from sources of ignition. Packaging must be kept tightly sealed when not in use to prevent moisture uptake and evaporation. All containers comply with hazardous material transport regulations (UN/ADR/IMDG/IATA).