

Praxair Material Safety Data Sheet

1. Chemical Product and Company Identification

Product Name: Environmentally hazardous substances, n.o.s. (dibutyl phthalate, solvent green 3) (MSDS No. P-4895-E)	Trade Names: Green Gauge Glass Liquid
Chemical Name: Mixture of dibutyl phthalate and solvent green 3	Synonyms: Green gauge glass dye (dibutyl phthalate and sudan green dye #4B), Lindox low-gravity gauge glass liquid Part No. 5724-4100. For dibutyl phthalate: di-n-butyl phthalate.
Chemical Family: Not applicable.	Product Grades: Not applicable.
Telephone: Emergencies: 1-800-645-4633* CHEMTREC: 1-800-424-9300* Routine: 1-800-PRAXAIR	Company Name: Praxair, Inc. 39 Old Ridgebury Road Danbury, CT 06810-5113

* Call emergency numbers 24 hours a day only for spills, leaks, fire, exposure, or accidents involving this product. For routine information, contact your supplier, Praxair sales representative, or call 1-800-PRAXAIR (1-800-772-9247).

2. Hazards Identification

EMERGENCY OVERVIEW

WARNING! Combustible, irritating liquid and vapor.
Causes eye irritation with pain and tearing.
May cause nausea and diarrhea if swallowed.
Vapors may cause respiratory irritation.
Causes mutations and embryo-fetal toxicity in laboratory animals.
Similar materials have caused cancer in laboratory animals.
Self-contained breathing apparatus may be required by rescue workers.
Under ambient conditions, this is a clear, green, nonvolatile, oily liquid that is odorless or has a slight aromatic odor.

OSHA REGULATORY STATUS: The components of this solution are considered hazardous by the OSHA Hazard Communications Standard (29 CFR 1910.1200).

POTENTIAL HEALTH EFFECTS:

Effects of a Single (Acute) Overexposure

Inhalation. Vapors may irritate nasal passages, causing discomfort.

Skin Contact. No harm expected.

Swallowing. May cause nausea and diarrhea.

Eye Contact. May cause eye pain and excess tearing but no evidence of damage.

Product: Environmentally hazardous substances, P-4895-E Date: December 2009
n.o.s. (dibutyl phthalate, solvent green 3)

Effects of Repeated (Chronic) Overexposure. No harm expected.

Other Effects of Overexposure. None known.

Medical Conditions Aggravated by Overexposure. The toxicology and the physical and chemical properties of this material suggest that overexposure is unlikely to aggravate existing medical conditions.

CARCINOGENICITY: None of the components of this product is listed by NTP, OSHA, or IARC.

POTENTIAL ENVIRONMENTAL EFFECTS: May be harmful to aquatic life. For further information, see section 12, Ecological Information.

3. Composition/Information on Ingredients

See section 16 for important information about mixtures.

COMPONENT	CAS NUMBER	CONCENTRATION
Dibutyl phthalate	84-74-2	99.99%*
Solvent green 3	128-80-3	0.01%

4. First Aid Measures

INHALATION: Remove to fresh air.

SKIN CONTACT: Wash with soap and water. If persistent irritation occurs, seek medical attention.

SWALLOWING: If victim is conscious and alert, give at least two glasses of milk or water and induce vomiting. Never give anything by mouth to an unconscious, convulsive, or unresponsive person. Call a physician.

EYE CONTACT: Flush eyes thoroughly with water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are flushed thoroughly. If irritation persists, see a physician, preferably an ophthalmologist.

NOTES TO PHYSICIAN: *There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient.*

5. Fire Fighting Measures

FLAMMABLE PROPERTIES: Combustible liquid. May form explosive mixtures with air and oxidizing agents. Heat of fire may build pressure in container, causing rupture. No part of a container should be subjected to temperatures above 125°F (51.1°C). Flammable, irritating vapors may spread from spill. Vapors may be ignited by pilot lights, other flames, smoking, sparks, heaters, electrical equipment, static discharges, or other ignition sources at locations distant from product handling point. Flammable atmospheres may linger. Before entering areas, especially confined areas, check atmosphere with approved device.

SUITABLE EXTINGUISHING MEDIA: Water spray, dry chemical, CO₂ or foam. Water or foam may cause frothing.

PRODUCTS OF COMBUSTION: Toxic fumes may result from thermal decomposition or burning. (See section 10.)

Product: Environmentally hazardous substances, P-4895-E Date: December 2009
n.o.s. (dibutyl phthalate, solvent green 3)

PROTECTION OF FIREFIGHTERS: WARNING! Combustible, irritating liquid and vapor. Immediately evacuate all personnel from danger area. Toxic fumes may be given off when green gauge glass liquid burns or is heated to decomposition. Use self-contained breathing apparatus. Immediately spray container with water from maximum distance until cool; then move it away from fire area if without risk. On-site fire brigades must comply with OSHA 29 CFR 1910.156.

Specific Physical and Chemical Hazards. Combustible. Causes eye, respiratory, and digestive tract irritation.

Protective Equipment and Precautions for Firefighters. Firefighters should wear self-contained breathing apparatus and full fire-fighting turnout gear.

6. Accidental Release Measures

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED:

WARNING! Combustible, irritating liquid and vapor.

Personal Precautions. May form explosive mixtures with air. Immediately evacuate all personnel from danger area. Vapors may spread from spill. Use self-contained breathing apparatus where needed. (See section 8.) Remove all sources of ignition if without risk. Ventilate area of spill or move leaking container to a well-ventilated area. Prevent runoff from contaminating surrounding environment.

Environmental Precautions. Prevent waste from contaminating the surrounding environment. Keep personnel away. Discard any product, residue, disposable container, or liner in an environmentally acceptable manner, in full compliance with federal, state, and local regulations. If necessary, call your local supplier for assistance.

7. Handling and Storage

PRECAUTIONS TO BE TAKEN IN HANDLING: Do not get liquid or vapor in eyes, on skin, or on clothing. Have safety showers and eyewash fountains immediately available to exposed workers. Wash thoroughly after handling. Protect containers from damage. Keep container closed when not in use, even when empty. Use only spark-proof tools and explosion-proof equipment. For other precautions in using this product, see section 16.

PRECAUTIONS TO BE TAKEN IN STORAGE: Store and use with adequate ventilation at all times. Keep away from sparks and open flame. Separate containers from oxygen and other oxidizers. Store in a cool, dry place. Store only where temperature will not exceed 125°F (52°C).

RECOMMENDED PUBLICATIONS: For further information on storage, handling, and use, see NFPA 30, *Flammable and Combustible Liquids Code*, published by the National Fire Protection Association, 1 Batterymarch Park, PO Box 9101, Quincy, MA 02269-9101; 1-800-344-3555; www.nfpa.org.

8. Exposure Controls/Personal Protection

COMPONENT	OSHA PEL	ACGIH TLV-TWA (2009)
Dibutyl phthalate	5 mg/m ³	5 mg/m ³
Solvent green 3	N.E.	N.E.

N.E. – Not Established

TLV-TWAs should be used as a guide in the control of health hazards and not as fine lines between safe and dangerous concentrations.

IDLH = 4,000 mg/m³

ENGINEERING CONTROLS:

Local Exhaust. Use an explosion-proof, local exhaust ventilation system with sufficient air flow velocity to maintain concentration below all applicable exposure limits.

Mechanical (General). Not recommended as a primary ventilation system to control worker's exposure.

Special. Not applicable.

Other. Not applicable.

PERSONAL PROTECTIVE EQUIPMENT:

Skin Protection. Wear chemically protective gloves made of neoprene, butyl rubber, nitrile, or vitron. Protective clothing where needed. Select in accordance with OSHA 29 CFR 1910.132 and 1910.133.

Eye/Face Protection. Safety glasses or protective goggles and full face shield. Select in accordance with OSHA 29 CFR 1910.133.

Respiratory Protection. A respiratory protection program that meet OSHA 29 CFR 1910.134, ANSI Z88.2, or MSHA 30 CFR 72.710 (where applicable) requirements must be followed whenever workplace conditions warrant respirator use. Use an air-supplied or air-purifying cartridge if the action level is exceeded. Ensure that the respirator has the appropriate protection factor for the exposure level. If cartridge type respirators are used, the cartridge must be appropriate for the chemical exposure (e.g., an organic vapor cartridge). For emergencies or instances with unknown exposure levels, use a self-contained breathing apparatus.

9. Physical and Chemical Properties

NOTE: All properties are for the dibutyl phthalate component

APPEARANCE:	Clear, green, nonvolatile, oily liquid.
ODOR:	None to slightly aromatic.
ODOR THRESHOLD:	Not available.
PHYSICAL STATE:	Liquid
pH:	Not applicable.
FREEZING POINT at 1 atm:	-31°F (-35°C)
BOILING POINT at 1 atm:	644°F (340°C)
FLASH POINT:	315°F (157.2°C)

Product: Environmentally hazardous substances,
n.o.s. (dibutyl phthalate, solvent green 3)

P-4895-E Date: December 2009

EVAPORATION RATE (Butyl Acetate = 1):	Very low
FLAMMABILITY:	Combustible
FLAMMABLE LIMITS IN AIR , % by volume:	LOWER: 0.47% @456°F (235.6°C) UPPER: Unknown, 2.5% (calculated)
VAPOR PRESSURE at 68°F (20°C):	<0.00194 psig (<1 mm Hg)
VAPOR DENSITY:	Not available.
SPECIFIC GRAVITY (H ₂ O = 1) at 68°F (20°C):	1.048
SPECIFIC GRAVITY (Air = 1) at 68°F (20°C) and 1 atm:	9.6
SOLUBILITY IN WATER at 68°F (20°C):	Negligible
PARTITION COEFFICIENT: n-octanol/water:	Not available.
AUTOIGNITION TEMPERATURE:	757°F (402.8°C)
DECOMPOSITION TEMPERATURE:	Not available.
PERCENT VOLATILES BY VOLUME:	100
MOLECULAR WEIGHT:	Not applicable.
MOLECULAR FORMULA:	Mixture of C ₁₆ H ₂₂ O ₄ & C ₂₂ H ₂₈ N ₂ O ₂

10. Stability and Reactivity

CHEMICAL STABILITY: Unstable Stable

CONDITIONS TO AVOID: Heat. This solution is stable at normal temperatures and pressures.

INCOMPATIBLE MATERIALS: Oxidizing agents, acids, alkalis. Contact with chlorine can cause an explosion.

HAZARDOUS DECOMPOSITION PRODUCTS: Thermal decomposition may produce carbon monoxide and/or carbon dioxide.

POSSIBILITY OF HAZARDOUS REACTIONS: May Occur Will Not Occur

Combustible liquid and vapor. May form explosive mixtures with air and oxidizing agents. See "Incompatible Materials" above.

11. Toxicological Information

NOTE: All effects are for the dibutyl phthalate component.

ACUTE DOSE EFFECTS: LD₅₀, inhalation, rat = 8000 mg/kg, LC₅₀ = 4250 mg/m³; LD₅₀, skin, rabbit = >20 mL/kg.

REPRODUCTIVE EFFECTS: Dibutyl phthalate has been shown to cause embryotoxicity, fetotoxicity, and teratogenicity in laboratory animals. Evidence of embryotoxicity and teratogenicity were only observed at high doses when signs of maternal toxicity were seen. Some phthalates have been shown to cause cancer in laboratory animals at high doses.

CNS EFFECTS: A long-term study of workers in the artificial leather industry showed Central Nervous System (CNS) toxicity after 6-7 years exposure to 1.7-66 mg/m³ of phthalates and other substances. Symptoms included pain, numbness, weakness, and spasms in the arms and legs. The study did not single out any one chemical as causing these symptoms.

12. Ecological Information

ECOTOXICITY: No known effects. Neither of the components is a Class I or Class II ozone-depleting chemical.

OTHER ADVERSE EFFECTS: May be toxic to aquatic life.

13. Disposal Considerations

WASTE DISPOSAL METHOD: Dispose of this product in an environmentally acceptable manner in full compliance with federal, state, and local regulations. Do not pour down drains, into sewers, or otherwise release into the environment. Place into lab packs for pickup by a licensed hazardous waste disposal service or use other authorized means. See section 6 for disposal following spills.

14. Transport Information

DOT/IMO SHIPPING NAME: Environmentally hazardous substances, n.o.s. (dibutyl phthalate, solvent green 3)

HAZARD CLASS:	PACKING GROUP/Zone:	IDENTIFICATION NUMBER:	PRODUCT RQ:
9	III	UN3082	10 lb (45.36 kg, dibutyl phthalate)

SHIPPING LABEL(s): CLASS 9

PLACARD (when required): CLASS 9

SPECIAL SHIPPING INFORMATION: None

MARINE POLLUTANTS: The dibutyl phthalate component (as di-n-butyl phthalate) is listed as a marine pollutant by DOT.

15. Regulatory Information

The following selected regulatory requirements may apply to this product. Not all such requirements are identified. Users of this product are solely responsible for compliance with all applicable federal, state, and local regulations.

U.S. FEDERAL REGULATIONS:

EPA (ENVIRONMENTAL PROTECTION AGENCY)

CERCLA: COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT OF 1980 (40 CFR Parts 117 and 302):

Reportable Quantity (RQ): 10 lb (45.36 kg, dibutyl phthalate)

SARA: SUPERFUND AMENDMENT AND REAUTHORIZATION ACT:

SECTIONS 302/304: Require emergency planning based on Threshold Planning Quantity (TPQ) and release reporting based on Reportable Quantities (RQ) of Extremely Hazardous Substances (EHS) (40 CFR Part 355):

TPQ: None

EHS RQ (40 CFR 355): None

Product: Environmentally hazardous substances, P-4895-E Date: December 2009
n.o.s. (dibutyl phthalate, solvent green 3)

SECTIONS 311/312: Require submission of MSDSs and reporting of chemical inventories with identification of EPA hazard categories. The hazard categories for this product are as follows:

IMMEDIATE: Yes

DELAYED: Yes

PRESSURE: No

REACTIVITY: No

FIRE: No

SECTION 313: Requires submission of annual reports of release of toxic chemicals that appear in 40 CFR Part 372.

Dibutyl phthalate is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40CFR Part 372.

40 CFR 68: RISK MANAGEMENT PROGRAM FOR CHEMICAL ACCIDENTAL RELEASE PREVENTION: Requires development and implementation of risk management programs at facilities that manufacture, use, store, or otherwise handle regulated substances in quantities that exceed specified thresholds.

None of the components of this mixture is listed as a regulated substance.

TSCA: TOXIC SUBSTANCES CONTROL ACT: The components of this mixture are listed on the TSCA inventory.

OSHA: OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION:

29 CFR 1910.119: PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS: Requires facilities to develop a process safety management program based on Threshold Quantities (TQ) of highly hazardous chemicals.

None of the components of this mixture is listed in Appendix A as a highly hazardous chemical.

STATE REGULATIONS:

CALIFORNIA: None of the components of this material is listed by California under the SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT OF 1986 (Proposition 65).

PENNSYLVANIA: The components of this material are subject to the PENNSYLVANIA WORKER AND COMMUNITY RIGHT-TO-KNOW ACT (35 P.S. Sections 7301-7320).

16. Other Information

Read and understand all labels and instructions supplied with all containers of this product.

NOTE: This product is used as the visible working fluid in manometers and gauges. Users must be familiar with the operation and hazards associated with the equipment used with this liquid.

OTHER HAZARDOUS CONDITIONS OF HANDLING, STORAGE, AND USE: *Combustible, irritating liquid and vapor.* May form explosive mixtures with air. Electrical equipment must be non-sparking or explosion-proof. Ground all equipment. Use a backflow prevention device in any piping.

NOTE: Prior to using any plastics, confirm their compatibility with the components of this mixture.

Mixtures. When you mix two or more chemicals, you can create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an industrial hygienist or other trained person when you evaluate the end product. Remember, gases and liquids have properties that can cause serious injury or death.

Product: Environmentally hazardous substances,
n.o.s. (dibutyl phthalate, solvent green 3)

P-4895-E Date: December 2009

HAZARD RATING SYSTEMS:

NFPA RATINGS:

HEALTH = 2
FLAMMABILITY = 1
INSTABILITY = 0
SPECIAL = None

HMIS RATINGS:

HEALTH = 2
FLAMMABILITY = 1
PHYSICAL HAZARD = 0

Product: Environmentally hazardous substances, P-4895-E Date: December 2009
n.o.s. (dibutyl phthalate, solvent green 3)

Praxair asks users of this product to study this MSDS and become aware of product hazards and safety information. To promote safe use of this product, a user should (1) notify employees, agents, and contractors of the information in this MSDS and of any other known product hazards and safety information, (2) furnish this information to each purchaser of the product, and (3) ask each purchaser to notify its employees and customers of the product hazards and safety information.

The opinions expressed herein are those of qualified experts within Praxair, Inc. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and the conditions of use of the product are not within the control of Praxair, Inc., it is the user's obligation to determine the conditions of safe use of the product.

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