G.J. CHEMICAL COMPANY, INC. SAFETY DATA SHEET

1. PRODUCT IDENTIFIER

1.1 PRODUCT NAME ----------> DIOCTYL TEREPHTHALATE

PRODUCT NUMBER(S)----------> 140000, 140001

TRADE NAMES AND SYNONYMS ---> bis(2-ethylhexyl)-1,4-benzenedicarboxylate

1.2 RELAVENT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST:

RECOMMENDED USE: Industrial: Plasticizer for PVC, Use as a plastisol, Use in coatings and inks, Manufacturing of adhesives and sealants, Plasticizer used in the production of plastic and plastic coating to increase flexibility.
USES ADVISED AGAINST: No information available

CAS No. 6422-86-2 **Chemical Family: Terephthalate Ester**

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Company: G.J. CHEMICAL CO., INC.
Address: 40 VERONICA AVENUE
SOMERSET, NJ 08873
Telephone: 1-973-589-1450
Fax: 1-973-589-3072

1.4 Emergency Telephone Number
Emergency Phone: 1-800-424-9300 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29CFR 1910 (OSHA HCS)
No known OSHA hazards
Not a hazardous substance or mixture.

2.2 GHS Label elements, including precautionary statements
Not a hazardous substance or mixture.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. INGREDIENTS

3.1 SUBSTANCE:

Ingredient	CAS No.	% by WT. Range	CLASSIFICATION
bis(2-ethylhexyl) terephthalate	6422-86-2 EC-No. 229-176-9 Reg.-No. 01-2119446265-39-XXXX	>98	Not a hazardous substance or mixture.
2-ethylhexyl methyl terephthalate	63468-13-3 EC-No. 264-249-9	<2	

No ingredients are hazardous according to OSHA criteria.

3.2 MIXTURE: Not applicable

4. FIRST-AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

INHALATION: DIOCTYL TEREPHTHALATE

*******FIRST AID*****- Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.**

SKIN CONTACT: DIOCTYL TEREPHTHALATE

*******FIRST AID*****- Remove contaminated clothing and shoes immediately. Wash affected area with soap or mild detergent and large amounts or water until no evidence of chemical remains (approximately 15-20 minutes). Get medical attention immediately.**

EYE CONTACT: DIOCTYL TEREPHTHALATE

****_FIRST AID_- Wash eyes immediately with large amounts of water, occasionally lifting upper and lower lids, until no evidence of chemical remains (approximately 15-20 minutes). Remove contact lenses, if worn, after initial flush. Consult a physician if irritation persists.**

INGESTION: DIOCTYL TEREPHTHALATE

****_FIRST AID_- Do not induce vomiting. Never give anything by mouth to an unconscious person. Have patient drink several glasses of water. Consult a physician or poison control center, treat symptomatically.**

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED:
Eye: Mildly irritating;
Skin: Mildly irritating;
Inhalation: Due to its low vapor pressure the inhalation potential is regarded as low. However if this product is heated, misted or sprayed, it may be irritating to the mucous membranes and upper respiratory tract.
Ingestion: May cause nausea, vomiting and diarrhea.
Chronic: The chronic health effects of this product have not been fully determined.
Medical Conditions Aggravated by Exposure: Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema) may be adversely affected by any fume or particulate matter.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED. Hazards: None known Treatment: Treat symptomatically.

5. FIRE FIGHTING MEASURES

FLASH POINT: 212°C (414°F) TCC **LEL %: Not Known**
AUTO-IGNITION TEMP: 387°C (729°F) **UEL %: Not Known**

5.1 SUITABLE EXTINGUISHING MEDIA: Foam--> x CO2--> x Dry Chemical--> x Water-fog--> x Other-->

Unsuitable extinguishing media: Do not use waterjet.

5.2 SPECIAL HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE: Isolate fire and deny unnecessary entry. Keep containers tightly closed. Isolate from all sources of ignition. Closed containers may explode when exposed to extreme heat. Immediately withdraw all personnel from the area in

case of rising sound from venting safety device or discoloration of the container. Vapor is heavier than air and can travel considerable distance to a source of ignition and flashback. Water or Foam may cause frothing.

CONDITIONS OF FLAMMABILITY: Not Flammable or Combustible.

HAZARDOUS COMBUSTION PRODUCTS: Highly dependent on combustion conditions. A complex mixture of airborne solids, liquids, and gases including carbon monoxide, carbon dioxide, carbon oxides and other unidentified organic compounds evolve when this material undergoes combustion.
Burning of this product will result in the release of toxic fumes.

5.3 ADVICE FOR FIREFIGHTERS: Avoid inhalation of fumes or vapors. Shut off source. Water fog may be used to cool closed containers to prevent pressure build up and possible auto ignition or explosion when exposed to extreme heat. Wear NIOSH/MSHA approved self-contained breathing apparatus (SCBA) for confined spaces and where there is exposure to vapors. Use full fire-fighting protective clothing. If protective equipment is not available or not used, fight fire from a protected location or safe distance. Material must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur. Isolate fire and deny unnecessary entry. Keep containers tightly closed. Immediately withdraw all personnel from the area in case of rising sound from venting safety device or discoloration of the container. Fine sprays/mists may be combustible at a temperature below flash point. Above the flash point, explosive vapor-air mixtures may be formed.

⑥. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES: Immediately evacuate all nonessential people. Verify that responders are properly trained and wearing appropriate respiratory equipment and fire resistant protective clothing during cleanup operations.

6.2 ENVIRONMENTAL PRECAUTIONS:
Keep out of water sources, drains and sewers, avoid release to the environment.

6.3 METHODS AND MATERIAL FOR CONTAINMENT AND CLEANING UP:
Methods for cleanup and containment:
Use explosion proof equipment. Shut off valves, contain spill, keep out of water sources and sewers, for smaller spills add non-flammable absorbent such as clay or silica in spill area. For large spills use foam on spill to minimize vapors clean up by vacuuming then using non-flammable absorbent. Remove contaminated soil to remove contaminated trace residues.

Methods for disposal:
Place all saturated absorbent, using non-sparking tools, in an approved container for disposal. Flush with water to remove trace reside. Minimize breathing vapors and skin contact, ventilate confined areas, open all windows and doors, assure conformity with applicable government regulations. Keep all nonessential people away.

6.4 REFERENCE TO OTHER SECTIONS: See Section 8 and 13

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING: Avoid breathing vapors in top of shipping container. Use with adequate ventilation. Do not take internally. Avoid prolonged or repeated contact with skin, eyes, and clothing. Avoid work practices that may release volatile components in the atmosphere. Avoid contaminating soil or releasing material into sewage and drainage systems. Use non-sparking tools to open or close containers.

Advice on general occupational hygiene:
Wash hands before breaks and after work. Keep away from food, drink and animal feeding stuffs. When using do not smoke.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES: Follow maximum allowed pile heights specified in the BOCA codes or the NFPA manual. Local fire authorities should be notified for storage of this material in any quantity. Local permits are required for storage in warehouse quantities. Store large quantities only in buildings designed to comply with OSHA 1910.106. Keep containers tight and upright to prevent leakage. Do not store with incompatible materials. Keep containers closed when not in use.

CONTAINER WARNINGS: Containers should be Bonded and Grounded when pouring. Use non-sparking tools to open or close containers. Avoid free fall of liquid in excess of a few inches. Empty containers release residue and can be dangerous. Do not pressurize, cut, weld, braze, solder, drill, or expose such containers to heat, sparks, static electricity or other sources of ignition. Do not attempt to clean. "Empty" drums should be completely drained, properly bunged and promptly returned to a drum re-conditioner.

7.3 SPECIFIC END USES: Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROL (PERSONAL PROTECTION)

8.1 CONTROL PARAMETERS:

Ingredient	CAS No.	% by WT. Range	Exposure Limits
bis(2-ethylhexyl) terephthalate	6422-86-2 EC-No. 229-176-9 Reg.-No. 01-2119446265-39-XXXX	>98	N.E.
2-ethylhexyl methyl terephthalate	63468-13-3 EC-No. 264-249-9	<2	N.E.

Key: (PEL) = Permissible Exposure Limit OSHA
(TLV) = Threshold Limit Value OSHA & ACGIH
(STEL) = Short Term Exposure Limit ACGIH
(WEEL) = USA. Workplace Environmental Exposure Levels
(TWA) = Time Weighted Average
CAS = Chemical Abstracts Registry Number
IDLH = Immediate Danger to Life and Health
N.E. =None Established

8.2 EXPOSURE CONTROLS

EXPOSURE GUIDELINES: Consider the potential hazards of this material (Section 3), applicable exposure limits, job activities, and other substances in the work place when designing engineering controls and selecting personal protective equipment. If engineering controls or work practices are not adequate to prevent exposure to harmful levels of this material, the personal protective equipment listed below is recommended.

ENGINEERING CONTROLS: Provide general dilution or local exhaust ventilation in volume and pattern to keep concentrations within permitted exposure limits. All areas should be ventilated in accordance with OSHA Regulation 29 CFR Part 1910. Explosion proof motors should be used in mechanical ventilation.

RESPIRATORY PROTECTION: The specific respirator selected must be based on contamination levels found in the work place, must not exceed the working limits of the respirator and be jointly approved by the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration (NIOSH-MSHA):

Respiratory protection approved by NIOSH/MSHA for protection against organic vapors and mists should be used to avoid inhalation of excessive air contamination.

BODY CLOTHING: Employee must wear appropriate protective (impervious) clothing and equipment to prevent repeated or prolonged contact with this substance. Use chemical resistant apron or other impervious clothing. Remove and wash contaminated clothing before reuse.

SKIN PROTECTION: Employee must wear appropriate protective gloves to prevent contact with this substance.
Glove material: Neoprene - acceptable
Butyl Rubber - best
Material thickness >= 0.5mm.

Breakthrough times of the glove material: >240 minutes

HYGIENE: Use good personal hygiene practices, wash hands before eating, drinking, smoking or using toilet facilities.

EYE/FACE PROTECTION: Use safety eyewear with splash guards or face shield. Emergency eyewash stations and deluge safety showers should be available in the work area.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

bis-(2-ethylhexyl) terephthalate 6422-86-2

APPEARANCE:	**Clear liquid**
COLOR:	**Colorless**
ODOR:	**Mild odor**
ODOR THRESHOLD:	**No Data Available**
pH:	**No Data Available**
MOLECULAR WEIGHT:	**390.56 amu**
MELTING POINT:	**< -67.2°C (< -89.0°F)**
BOILING POINT:	**400°C (752°F)**
SPECIFIC GRAVITY:	**0.9831 at 20°C**
DENSITY (20°C):	**0.986 g/ml @25°C (77°F)**
VAPOR PRESSURE:	**1mmHg@217°C**
VAPOR DENSITY:	**13.47**
WATER SOLUBILITY:	**0.35 mg/l at 22.5°C (72.5°F)**
PARTITION COEFFICIENT N-OCTANOL/WATER	**log Pow: 8.39**
FLASH POINT:	**212°C (414°F) - closed cup**
EVAPORATION RATE (BUTYL ACETATE=1):	**Negligible**
UPPER FLAMMABILITY LIMIT:	**No data available**
LOWER FLAMMABILITY LIMIT:	**No data available**
AUTO INGNITION TEMPERATURE:	**387°C (729°F)**
DECOMPOSITION TEMPERATURE:	**No data available**
VISCOSITY:	**100cps**
EXPLOSIVE PROPERTIES:	**No data available**
OXIDIZING PROPERTIES:	**No data available**

9.2 OTHER INFORMATION: **No data available**

10. STABILITY AND REACTIVITY INFORMATION

10.1 REACTIVITY: No data available

10.2 CHEMICAL STABILITY: Unstable ( ) Stable (X)

10.3 POSSIBILITY OF HAZARDOUS REACTIONS: No data available

HAZARDOUS POLYMERIZATION: May occur ( ) Will not occur (X)

10.4 CONDITIONS TO AVOID:--> None Known.

10.5 INCOMPATIBLE MATERIALS: Strong oxidants such as liquid chlorine, oxygen, sodium hypochlorite, inorganic acids e.g. hydrochloric acid hydrogen peroxide.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS: Fumes, Smoke, Carbon Monoxide, Carbon Dioxide.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS:

Routes of Entry: Inhalation--> x Skin--> x Ingestion--> x

ACUTE HEALTH EFFECTS:

Effects of overexposure:

Eye> Mildly irritating;

Skin> Mildly irritating;

Inhalation> Due to its low vapor pressure the inhalation potential is regarded as low. However if this product is heated, misted or sprayed, it may be irritating to the mucous membranes and upper respiratory tract.

Ingestion> May cause nausea, vomiting and diarrhea.

Chronic: The chronic health effects of this product have not been fully determined.

Medical Conditions Aggravated by Exposure> Individuals with chronic respiratory disorders (i.e., asthma, chronic bronchitis, emphysema) may be adversely affected by any fume or particulate matter.

ACUTE TOXICITY:

The effects of overexposure shown in Section II are based on acute toxicity profiles. Typical values are:

Ingredient	Oral LD50 (Rat)	Skin LD50 (Rabbit)	Inhalation LC50
Dioctyl Terephthalate	>5000mg/kg highest dose tested	19680mg/kg highest dose tested	

SKIN CORROSION/IRRITATION: Skin - rabbit Result: No skin irritation - 4 h (OECD Test Guideline 404)

SERIOUS EYE DAMAGE/EYE IRRITATION: Eyes - rabbit Result: Mild eye irritation (OECD Test Guideline 405)

RESPIRATORY OR SKIN SENSITIZATION: No Data Available

MUTAGENIC EFFECTS: Germ cell mutagenicity S. typhimurium Result: negative

CARCINOGEN STATUS
IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

REPRODUCTIVE TOXICITY: No Data Available

Specific target organ toxicity (STOT-SE) - single exposure (Globally Harmonized System): no data available

Specific target organ toxicity (STOT-RE) - repeated exposure (Globally Harmonized System): no data available

ASPIRATION HAZARD: No Data Available

11.2 ADDITIONAL DATA: Dioctyl Terephthalate like most phthalate esters is poorly absorbed from the digestive tract and not absorbed through the skin. (Patty, Ind. Hyg. & Tox. 3rd Ed. 2E, 2C, 1981-1982
RTECS: WZ0883500

12. ECOLOGICAL INFORMATION

12.1 ACUTE AQUATIC TOXICITY:
Toxicity to Fish:
LC50 Pimephales promelas (Fathead Minnow) >984 mg/L – 96 h static test (OECD Test Guideline 203)

Toxicity to daphnia and other aquatic invertebrates:
EC50 - Daphnia magna (Water flea) – 0.0014 mg/l - 48 h - Immobilization (OECD Test Guideline 202)

Toxicity to algae:
EC50 - Selenastrum capricornutum (green algae) - > 0.86mg/L – 72 h - Growth inhibition (OECD Test Guideline 201)

Toxicity to bacteria:
EC50 - Sludge Treatment - > 10 mg/l - 3 h - Respiration inhibition
(OECD Test Guideline 209)

12.2 PERSISTANCE AND DEGRADABILITY: aerobic - Exposure time 28 d Result: 73.05 % - Readily biodegradable. (OECD Test Guideline 301B)

Biological Oxygen Demand (BOD): DOTP has a low biochemical oxygen demand and little potential to cause oxygen depletion in aqueous systems, and a low potential to affect aquatic organisms.

12.3 BIOACCUMULATIVE POTENTIAL: Octanol/Water Partition Coefficient: (Sea Water) 5.25 (Well Water) 5.72

Bio-concentration Factor (BCF): 393 measured

12.4 MOBILITY IN SOIL: Log Koc: 5.07 - 6.6 (QSAR model)

12.5 RESULTS OF PBT AND vPvB Assessment: This substance is not classified as PBT or vPvB.

12.6 OTHER ADVERSE EFFECTS: No data available.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS: Hazard characteristic and regulatory waste stream classification can change with product use. Accordingly it is the responsibility of the user to determine the proper storage, transportation, treatment and or disposal methodologies for spent materials and residues at time of disposition. Dispose in accordance with all applicable disposal regulations.

CONTAMINATED PACKAGING: Dispose of as unused product.

The information offered here is for the product as shipped. Use and/or alterations to the product such as mixing with other materials may significantly change the characteristics of the material and alter the RCRA classification and the proper disposal method.

14. TRANSPORT INFORMATION

Land Transport (DOT)
14.1 USDOT ID Number----------> N/A
14.2 USDOT Shipping Name----------> Not DOT Regulated
14.3 USDOT Hazard Classification-------> N/A
USDOT Label Codes----------> N/A
14.4 USDOT Package Code----------> N/A
14.5 Marine Pollutant----------> No
14.6 Special precautions for user--------> None

Sea Transport (IMDG)

14.1 UN Number:----------> N/A
14.2 Proper Shipping Name----------> Not Dangerous Goods
14.3 Hazard Class:----------> N/A
USDOT Label Codes----------> N/A
14.4 Packing Group:----------> N/A
14.5 Marine Pollutant----------> No

Air Transport (IATA)
14.1 UN Number:----------> N/A
14.2 Proper Shipping Name:----------> Not Dangerous goods
14.3 Hazard Class:----------> N/A
USDOT Label Codes----------> N/A
14.4 Packing Group:----------> N/A
14.5 Environmental hazard----------> No

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE:

SARA TITLE III (Superfund Amendment and Reauthorization Act)

SECTION 302 AND 304: Extremely Hazardous Substance List (40 CFR 355) - Not Listed
SECTION 313: Toxic Chemicals Listing (40 CFR 372.65) - Not Listed
SECTION 311/312: Hazard Categorization (40 CFR 370) - None

CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)

SECTION 102(A) Hazardous Substances (40 CFR 302.4) - Not Listed
Reportable Quantity – None
SECTION 101(14) Reportable Quantity: None

Massachusetts Right to Know Components
No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right to Know Components
Bis(2-ethylhexyl) terephthalate CAS-No.6422-86-2

New Jersey Right to Know Components
Bis(2-ethylhexyl) terephthalate CAS-No.6422-86-2

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

TSCA (Toxic Substance Control Act)
Dioctyl Terephthalate CAS-No. - 6422-86-2 and 2-ethylhexyl methyl terephthalate CAS-No. 63468-13-3 are listed on the TSCA Inventory.

International Inventories:

Country or Region	Inventory Name	On inventory yes/no
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemicals Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Japan	Industrial Safety & Health Law Inventory (ISHL)	Yes
Korea	Existing Chemicals List (ECL)	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Switzerland	Inventory of Notified New Substances (CHINV)	Yes
United States & Puerto Rico	Toxic Substances Control Act Inventory	Yes

15.2 CHEMICAL SAFETY ASSESSMENT: A chemical safety assessment has not been carried out for this substance.`

16. OTHER INFORMATION:

HMIS (Hazardous Materials Identification System)
Hazard Rating:
4-Extreme
3-High
2-Moderate
1-Slight
0-Insignificant

NFPA RATINGS (SCALE 0-4): Health=0 Fire=1 Reactivity=0
HMIS RATINGS (SCALE 0-4): Health=0 Fire=1 Reactivity=0 PPE=B

Text of hazard statement codes in Section 2 and 3:
Not a hazardous substance or mixture.

Date of preparation-------> October 3, 1997
Revision Number----------> 1.7
Revision Content----------> General update all sections

Revision Date----------> January 22, 2019
Prepared by----------> T. G. Fenstermaker Jr.

Acronyms:

ACGIH	-	American Conference of Governmental Industrial Hygenists
AIHA	-	American Industrial Hygiene Association
ANSI	-	American Nation Standards Institute
API	-	American Petroleum Institute
CERCLA	-	Comprehensive Emergency Response, Compensation, and Liability Act
DOT	-	U.S. Department of Transportation
EPA	-	U.S. Environmental Protection Agency
HMIS	-	Hazardous Materials Information System
IARC	-	International Agency For Research On Cancer
MSHA	-	Mine Safety and Health Administration
NFPA	-	National Fire Protection Association
NIOSH	-	National Institute of Occupational Safety and Health
NOIC	-	Notice of Intended Change (Proposed change to ACGIH TLV)
NTP	-	National Toxicology Program
OPA	-	Oil Pollution Act of 1990
OSHA	-	U.S. Occupational Safety & Health Administration
PEL	-	Permissible Exposure Limit (OSHA)
RCRA	-	Resource Conservation and Recovery Act
REL	-	Recommended Exposure Limit (NIOSH)
SARA	-	Superfund Amendments and Reauthorization Act of 1986 Title III
SCBA	-	Self-Contained Breathing Apparatus
STEL	-	Short-Term Exposure Limit (generally 15 minutes)
TLV	-	Threshold Limit Value
TSCA	-	Toxic Substances Control Act
TWA	-	Time Weighted Average (8hr.)
WHMIS	-	Canadian Workplace Hazardous Materials Information System