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SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

Product	Diisononyl Phthalate (DINP) 99.5% Min	**Revision date**	2026-11-16
Version	1.0	**Brand**	Richest

SECTION 1: Identification of the substance/mixture and of the company/undertaking

Product name	Diisononyl Phthalate (DINP) 99.5% Min
Synonyms	Diisononyl phthalate; Bis(isononyl) phthalate; 1,2-Benzenedicarboxylic acid, di-isononyl ester; DINP
CAS No.	28553-12-0
EC No.	249-079-5
Molecular formula	C26H42O4
Molecular weight	418.61 g/mol
Relevant identified uses	General-purpose plasticizer for flexible PVC films, sheets and coated fabrics; Wire and cable insulation compounds; PVC plastisols, flooring and synthetic leather; Coatings and rubber formulations
Uses advised against	No specific uses advised against were identified in the reviewed sources.
Company	Richest Group
Address	No. 999, Jiangyue Rd, Minhang, Shanghai 201114, China
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SECTION 2: Hazards identification

GHS Classification	Not classified for physical/chemical hazards, human health or the environment under EU CLP; not a hazardous substance or mixture (Plastay SDS, revision 24 June 2025)
Pictogram(s)	Pending
Signal word	None
Hazard statement(s)	Pending
Precautionary statement(s)	Pending
Other hazards	Tumors have been detected in experimental animals but may not be relevant to humans. [ICSC] DINP is not a pure substance, but a complex mixture containing mainly C9-branched isomers, with mean formula C26H42O4.

SECTION 3: Composition/information on ingredients

Component	Diisononyl Phthalate (DINP) 99.5% Min
CAS No.	28553-12-0
EC No.	249-079-5

SECTION 3: Composition/information on ingredients	
Classification	Not classified for physical/chemical hazards, human health or the environment under EU CLP; not a hazardous substance or mixture (Plastay SDS, revision 24 June 2025)
Concentration	≥99.5% (ester content, GC)

SECTION 4: First-aid measures	
If inhaled	Inhalation: move to fresh air, keep at rest and obtain medical attention if breathing is difficult.
In case of skin contact	Skin: remove contaminated clothing and wash with soap and water.
In case of eye contact	Eyes: rinse cautiously for several minutes, remove contact lenses if easy and continue rinsing.
If swallowed	Ingestion: rinse mouth, do not induce vomiting, and never give anything by mouth to an unconscious person
Most important symptoms and effects	No data available
Indication of immediate medical attention	Treat symptomatically. Show this safety data sheet to medical personnel.

SECTION 5: Fire-fighting measures	
Suitable extinguishing media	Use dry chemical, water spray, carbon dioxide or polyvalent foam. DINP is combustible and may produce acrid smoke, carbon monoxide and carbon dioxide. Cool exposed containers with water spray, contain fire water and use positive-pressure SCBA with full protective clothing.
Unsuitable extinguishing media	No data available
Special hazards arising from the chemical	This chemical is combustible. (NTP, 1992)
Advice for firefighters	Fires involving this material should be controlled using a dry chemical, carbon dioxide or Halon extinguisher. (NTP, 1992)

SECTION 6: Accidental release measures	
Personal precautions and emergency procedures	Avoid contact with the material. Ensure adequate ventilation. Wear appropriate personal protective equipment.
Environmental precautions	Prevent uncontrolled release to drains, soil and watercourses.
Methods for containment and cleaning up	Keep unprotected personnel away, ventilate and eliminate ignition sources. Avoid skin/eye contact, prevent entry into soil, drains and waterways, absorb with dry sand or another non-combustible absorbent, and place in suitable closed containers. Do not use sawdust or flush to sewer.

SECTION 7: Handling and storage	
Precautions for safe handling	Protect containers from damage, prohibit smoking and open flames, ground against static electricity, avoid contact with skin, eyes and clothing, and wash hands after handling. Do not eat, drink or smoke during use.
Conditions for safe storage, including incompatibilities	Store in the original container in a cool, dry, well-ventilated place, protected from moisture and below 40 °C. Plastay states a two-year storage period when moisture is excluded. Ground containers, keep away from ignition sources, strong oxidants, acids and alkalis, and do not use PVC storage containers.

SECTION 8: Exposure controls/personal protection	
Occupational exposure limit values	No data available
Biological limit values	No biological limit values were identified in the reviewed sources.
Appropriate engineering controls	The selected SDS does not assign an occupational exposure limit. Use adequate ventilation, suitable gloves and eye protection, and provide eyewash and quick-drench facilities. Respiratory protection for mist or spray should be selected through a workplace exposure assessment.
Eye/face protection	Not required (USCG, 1999)
Skin and body protection	Not required (USCG, 1999)
Respiratory protection	Use suitable respiratory protection if exposure limits may be exceeded or dust, mist or vapour is generated.
Thermal hazards	No specific thermal hazards were identified in the reviewed sources; see Sections 5 and 10.

SECTION 9: Physical and chemical properties	
Physical state	Transparent oily liquid without visible impurities
Colour	Colorless liquid
Odour	No data available
Melting point / freezing point	-48 °C
Boiling point / boiling range	BP: 252 °C at 5 mm Hg
Flammability	This chemical is combustible. (NTP, 1992)
Explosion / flammability limits	No data available
Flash point	221 °C c.c.
Auto-ignition temperature	380 °C
Decomposition temperature	No data available
pH	No data available
Viscosity	500 cST at 0 °C; 102 cST at 20 °C; 37 cSt at 37.8 °C; 6 cSt at 100 °C
Solubility	In water, 0.2 mg/L at 20 °C; Solubility in water, g/100ml at 20 °C:
Partition coefficient n-octanol/water	8.8
Vapour pressure	5.4X10-7 mm Hg at 25 °C
Density and/or relative density	0.972 g/mL at 25°C
Relative vapour density	No data available
Particle characteristics	Not applicable (liquid).
Appearance	Clear, transparent liquid
Odor	Typical
Density at 20 °c	0.969–0.979 g/cm³
Refractive index at 20 °c	1.4810–1.4890
Viscosity at 20 °c	70–100 cP
Freezing point	-49 °C (Plastay SDS)

SECTION 9: Physical and chemical properties	
Autoignition temperature	370 °C (DIN 51794)
Water solubility	≤0.00004 g/L at 20 °C (manufacturer TDS)
Vapor pressure	Approximately 2.1 × 10^-6 Pa at 20 °C (Plastay SDS)
Form	Liquid
Refractive index	Index of refraction: 1.486 at 20 °C/D

SECTION 10: Stability and reactivity	
Reactivity	Insoluble in water.
Chemical stability	Stable under ordinary conditions of use and storage; no hazardous polymerization is expected. Avoid heat, flames, ignition sources, strong oxidizers, strong bases, acids and alkalis. Thermal decomposition can produce carbon monoxide, carbon dioxide and irritating fumes.
Possibility of hazardous reactions	DI-ISONONYL PHTHALATE reacts exothermically with acids to generate isononyl alcohol and phthalic acid. Strong oxidizing acids may cause a vigorous reaction that is sufficiently exothermic to ignite the reaction products. Heat is also generated by interaction with caustic solutions. Flammable hydrogen is generated by mixing with alkali metals and hydrides.
Conditions to avoid	NO open flames.
Incompatible materials	No data available
Hazardous decomposition products	When heated to decomposition it emits acrid smoke and irritating vapors.

SECTION 11: Toxicological information	
Toxicological summary	Plastay SDS reports oral LD50 >10000 mg/kg bw (rat), dermal LD50 >3160 mg/kg bw (rabbit) and inhalation LC50 >4400 mg/m³. It does not classify DINP for acute toxicity, irritation, sensitization, mutagenicity, carcinogenicity or reproductive toxicity under the stated CLP assessment.
Acute toxicity	LD50 Rabbit dermal >3.16 g/kg; LD50 Rat oral >10 g/kg; LD50 Rat oral >40000 mg/kg bw /purity: 98.9% /; LD50 Rat oral >40000 mg/kg bw /purity: 99.2% /
Health effects	Produces no ill effects at normal temperatures, but may give off irritating vapors at high temperatures. (USCG, 1999)

SECTION 12: Ecological information	
Environmental fate	The SDS reports 96-hour fish LC50 >102 mg/L and 48-hour Daphnia EC50 >74 mg/L, with no acute toxicity at maximum achievable aqueous concentrations. DINP is assessed as not persistent and having low bioaccumulative potential; avoid environmental release.
Ecotoxicity	LC50; Species: Pimephales promelas (Fathead minnow); Conditions: flow through, 20-24 °C, pH 6.6-7.2; Concentration: >0.19 mg/L for 96 hr; LC50; Species: Pimephales promelas (Fathead minnow); Conditions: static, 20+/-1 °C, pH 6.6-7.2; Concentration: >0.14 mg/L for 96 hr
Persistence degradability	AEROBIC: A shake flask CO2 evolution test using an inoculum prepared from soil and sewage, resulted in 99% biodegradation of diisononyl phthalate and 62% theoretical CO2 evolution after a 28 day incubation period(1). Diisononyl phthalate had a biodegradation half-life of 5.31 days with a 7.1 day lag time(1).

SECTION 12: Ecological information

Bioaccumulative potential	An estimated BCF of 230 was calculated in fish for diisononyl phthalate(SRC), using an estimated log Kow of 9.37(1) and a regression-derived equation(1). According to a classification scheme(2), this BCF suggests the potential for bioconcentration in aquatic organisms is high(SRC).
Mobility in soil	Using a structure estimation method based on molecular connectivity indices(1), the log Koc of diisononyl phthalate can be estimated to be 5.52(SRC). Another estimated value is reported as 5.49(2). According to a classification scheme(3), these estimated Koc values suggest that diisononyl phthalate is expected to be immobile in soil.
Other adverse effects	The rate constant for the vapor-phase reaction of diisononyl phthalate with photochemically-produced hydroxyl radicals has been estimated as 2.3X10-11 cu cm/molecule-sec at 25 °C(SRC) using a structure estimation method(1). This corresponds to an atmospheric half-life of about 16 hours at an atmospheric concentration of 5X10+5 hydroxyl radicals per cu cm(1).

SECTION 13: Disposal considerations

Product disposal methods	Recover or recycle where practical. Send remaining product, residues and spill-cleaning materials to an approved incinerator or approved waste facility in accordance with local requirements. Prevent dispersal into soil, drains and waterways; empty containers may retain residues and must be handled safely.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal in accordance with local regulations.

SECTION 14: Transport information

UN Number (ADR/RID, IMDG, IATA)	Not regulated as dangerous goods
UN Proper Shipping Name	Not regulated as dangerous goods
Transport hazard class(es)	Not regulated as dangerous goods
Packing group	Not regulated as dangerous goods
Environmental hazards / Marine pollutant	See cited public SDS
Special precautions for user	Not applicable; no transport warning sign required; No environmentally hazardous substance/marine pollutant designation in the Plastay SDS; Plastay SDS states that the product is not regulated as a dangerous good under IMDG, IATA, ADR/RID or DOT. Prevent spills and protect containers from physical damage.

SECTION 15: Regulatory information

Safety, health and environmental regulations specific for the product	EC 249-079-5; Plastay SDS lists REACH registration 01-2119430798-28-0006 and TSCA/DSL/IECSC inventory coverage. EU restrictions for certain phthalates in toys and childcare articles must be checked for the intended formulation and destination market; no sensitive-use suitability is implied.

SECTION 16: Other information

Full text of H-Statements	Pending
Revision date	2026-11-16
Version	1.0

SECTION 16: Other information

References	Supplier technical documents, public SDS/COA/TDS and regulatory sources reviewed. Public data citations are listed below. Public data sources: Inafleks DINP product and technical data: https://www.plastay.com/en/products/inafleks-dinp/ | Inafleks DINP Technical Data Sheet, Rev. 08: https://www.plastay.com/documents/products/inafleks-dinp/tds-en.pdf | Inafleks Bis-(isononyl) Phthalate Safety Data Sheet, revision 24 June 2025: https://www.plastay.com/documents/products/inafleks-dinp/sds-en.pdf | Palatinol N (DINP) product overview: https://chemicals.basf.com/global/en/Petrochemicals/Plasticizers/europe/products | PubChem Diisononyl phthalate (CID 590836): https://pubchem.ncbi.nlm.nih.gov/compound/590836
Abbreviations	CAS: Chemical Abstracts Service; ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road; IMDG: International Maritime Dangerous Goods; IATA: International Air Transport Association; SDS: Safety Data Sheet.
Disclaimer	The information in this SDS applies to the specified product and is provided in good faith based on information available to Richest Group at the date of issue. It describes health, safety and environmental requirements and does not constitute a guarantee of product properties. Users must assess suitability and comply with applicable regulations.