



Safety Data Sheet (SDS)

Revision 1 Review Date: 11-5-2014

1. Chemical Product and Company Identification

Product Name:	DINP
Distributed By:	HB Chemical 1665 Enterprise Parkway Twinsburg Oh 44087 Phone - 330-920-8023
MSDS Prepared By (w Suppliers Input):	HB Chemical
Chemical Name / Family:	Di-isononyl Phthalate
EC No.:	249-079-5
REACH:	01-2119430798-28-0008
CAS No:	28553-12-0
Product Use:	Plasticizer for Polymer
Uses advised against:	Shall not be used as substance or in mixtures in concentrations greater than 0.1% by weight of the plasticized material, in toys and childcare articles with can be place in the mouth by children. (Commission Regulation (EC) No. 552/209 of 2009-06-22 amending Regulation EC no 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) as regards Annex XVII.

For emergency health, safety, and environmental information, calls 330-920-8023

For emergency transportation information, in the United States: call CHEMTREC at 800-424-9300

2. Hazard(s) Identification

<u>Warning:</u>	A clear colorless, oily liquid, that is not normally irritating to eyes and skin. However, at processing temperatures, the product can emit fumes and vapors, which may cause irritation of the eyes and respiratory tract. Ingestion and prolonged contact should be avoided.
<u>Eye Contact:</u>	No hazard expected in normal use.
<u>Skin Contact:</u>	No hazard expected in normal use.

<u>Ingestion:</u>	No hazard expected in normal use.
<u>Inhalation:</u>	No hazard expected in normal use.
<u>HMIS Hazard Ratings:</u>	Health- 1, Flammability - 1, Reactivity - 0
<u>Classification according to Regulation (EC) No 1272/2008 (CLP):</u>	Labeling not required according to EU-CLP Ordinance.
<u>Classification as per Directive 67/548/EC:</u>	Substance is not classified as dangerous according to Directive 67/548/EEC.
<u>Hazard pictograms/ Signal word:</u>	Not applicable.
<u>Other hazards:</u>	The substance does not meet the criteria for PBT or vPvB substance.

3. Composition / Information on Ingredients

di-isononyl phthalate, 100% C.A.S. # 28553-12-0 EC-NO 249-079-5 REACH No. 01-2119430798-28-0000

4. First Aid Measures

<u>Inhalation:</u>	If symptoms develop, move victim away from exposure and into fresh air. Administer oxygen if breathing is difficult.
<u>Eyes:</u>	Flush eyes with water for 15 Min Call a physician if irritation develops.
<u>Skin:</u>	Wash skin with soap and water. If in contact with hot product, treat as a burn.
<u>Ingestion:</u>	Do not induce vomiting. Never give anything by mouth to unconscious person. Seek medical attention.

5. Fire-Fighting Measures

<u>Flash Point:</u>	228 °C, 292 °F Method DINH EN 22 719 Lower Explosion limit 0.3% (V) (218 °C) Method DIN EN 1839 The temperature refers to the explosion container
<u>Suitable Extinguishing Media:</u>	Water Spray, Dry powder, Carbon Dioxide CO2, Foam .
<u>Unsuitable extinguishing media:</u>	High volume water jet.
<u>Special Fire Fighting Procedures:</u>	Move container from fire area if it can be done without risk Use agents suitable for type of surrounding fire Avoid inhalation of material or combustion by-products

Do not scatter spilled material with high-pressure water streams

Hazardous Combustion Products:

This product will decompose under extreme temperatures forming oxides of carbons. Flammability Class (OSHA) IIIB

6. Accidental Release Measures

Steps to be taken in case material is spilled:

Wear appropriate personal protective equipment.
Stop leak if you can do it without risk
Small Spill: Absorb with sand or other non-combustible material
Collect spilled material in appropriate container for disposal
Keep unnecessary people away, isolate hazard area and deny entry.

Environmental Disposal Information:

Do not allow entrance in sewage water, drainage system, stretches of water, soil. Issue an immediate alarm report to the company environmental protection department if the product unintentionally leaves the area.

Waste Disposal:

Reclaim or dispose of in accordance with local, state, and federal regulations

7. Handling and Storage:

Precautions to be taken in handling:

Store tightly closed container in a cool, dry and well-ventilated area.
Temperature class: T 2

Storage:

Store and handling in accordance with all current regulations and standards. Store in a cool, dry, ventilated area. Keep containers closed when not in use. Do not store near extreme heat, open flame, or sources of ignition.

8. Exposure Controls / Personal Protection

Control parameters:

Community workplace exposure limits were not established.

DNELs for workers:

Exposure pattern	Route	DNEL	Most sensitive endpoint
Long-term - systemic effects	Dermal	366 mg/kg bw/day	repeated dose toxicity
Long-term - systemic effects	Inhalation	51.72 mg/m ³	repeated dose toxicity

DNELs for general population:

Exposure pattern	Route	DNEL	Most sensitive endpoint
Long-term - systemic effects	Dermal	220 mg/kg bw/day	repeated dose toxicity
Long-term - systemic effects	Inhalation	15.3 mg/m ³	repeated dose toxicity
Long-term - systemic effects	Oral	4.4 mg/kg bw/day	repeated dose toxicity

PNECs:

PNEC _{freshwater}	not determined; substance does not pose a risk to the freshwater aquatic compartment
PNEC _{marine-water}	not determined; substance does not pose a risk to the marine aquatic compartment
PNEC _{intermittent}	not determined; intermittent releases of DINP do not pose a risk to aquatic compartments
PNEC _{freshwater sediment}	not determined; substance does not pose a risk to the sediment compartment
PNEC _{marine sediment}	not determined; substance does not pose a risk to the sediment compartment
PNEC _{soil}	30 mg/kg dry weight
PNEC _{STP microbes}	not determined; substance does not pose an unacceptable risk to wastewater treatment plant microbes
PNEC _{oral}	150 mg/kg food

Exposure Controls:

No data available.

Respiratory Protection:

Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any chemical cartridge respirator with organic vapor cartridge(s). Any chemical cartridge respirator with a full face piece and organic vapor cartridge (s). Any air-purifying respirator with a full face piece and organic vapor canister

Ventilation:

Provide local exhaust or process enclosure ventilation system.

Protective Gloves:

Wear appropriate chemical resistant gloves.

Eye Protection:

Wear safety glasses or chemical goggles to prevent eye contact as necessary. Wear a face shield if so lashing is a problem.

Skin and Body Protection:

Wear appropriate chemical resistant clothing.

Other Precautions:

Wash with soap and water before eating, drinking or using toilet facilities. Launder contaminated clothing before reuse.

Thermal hazards:

The substance does not represent a thermal hazard, thus special consideration is not required.

Environmental exposure controls:

Avoid dispersal of spilled material and contact with soil, ground and surface water, drains and sewers.

Decontamination Facilities:

Eye bath, washing facilities (sinks / showers)

9. Physical and Chemical Properties

Appearance:	colorless and clear liquid
Odour:	slight
Odour threshold:	no data available
pH:	no data available
Melting point/freezing point:	Pour point: < -50°C (223 K at 101 325 Pa)
Initial boiling point and boiling range:	>300°C at 1013 hPa
Flash point:	236°C at 1013 hPa (509 K at 101 325 Pa)
Evaporation rate:	no data available
Flammability (solid, gas):	non flammable
Upper/lower flammability or explosive limits:	no data available
Vapour pressure:	0.00006 Pa at 20°C
Vapour density:	no data available
Relative density:	0.97 g/cm ³ at 20°C)
Solubility(ies):	water solubility: 0.6 µg/l at 20°C
Partition coefficient: n-octanol/water:	Log Kow (Pow): 8.8 – 9.7 at 25°C
Auto-ignition temperature:	400°C at 1013 hPa (673 K at 101 325 Pa)

Decomposition temperature:	no data available
Viscosity:	77.6 mm ² /s at 20°C 27.7 mm ² /s at 40°C
Explosive properties:	non explosive
Oxidising properties:	non oxidizing

Other information:

Stability in organic solvents and identity of relevant degradation product: Di-isononyl phthalate is stable in organic solvents.

10. Stability and Reactivity

Reactivity:	Stable at normal temperatures and pressure.
Chemical stability:	Stable under normal conditions.
Conditions to Avoid:	Keep away from heat, and other sources of ignition.
Materials to Avoid:	Strong oxidizing agents, Hydrogen peroxide
Hazardous Decomposition:	None known.

11. Toxicological Information

Acute toxicity:

The substance is not classified for acute toxicity according to Regulation (EC) No 1272/2008. Acute

toxicity:oral

Method: In principle, the methods described in OECD Guideline 401 were used

Species: rat (Sprague-Dawley) male/female

Routes of administration: oral: gavage

Results: LD50: > 10000 mg/kg bw (male/female)

Acutetoxicity:inhalation

Method: 43CFR163 (EPA proposed test guideline, 1978)

Species: rat (Sprague-Dawley) male/female

Routes of administration: inhalation: aerosol

Results: LC50 (4 h): > 4.4 mg/L air (nominal) (male/female) (aerosol) (read-across)

Acutetoxicity:dermal

Method: no guideline followed; the study was undertaken as a classical LD50 determination

Species: rabbit (New Zealand White) female

Routes of administration: coverage: occlusive

Results: LD50: > 3160 mg/kg bw (male/female) (read-across)

Skin corrosion/irritation:

The substance is not classified for skin corrosion/irritation according to Regulation (EC) No 1272/2008.

Humandata

Method: A study consisting of a single 24-hour application using an occluded patch was conducted to evaluate the potential to cause irritation. Two evaluations were made; one

30 minutes after patch removal and the second at 24 hours post-patch removal. Two control were also tested; a positive irritant control and a negative control.

Species: human male/female

Results: The group mean score for irritation was 0.00 (read-across).

Animaldata

Method: OECD Guideline 404 (Acute Dermal Irritation / Corrosion)

Coverage: semioclusive (clipped)

Species: rabbit (New Zealand White)

Results: very mild skin irritant (Primary dermal irritation index (PDII): 0.08 ; mean; 24 and 72 hours; fully reversible within: 24 hours) (read-across)

Serious eye damage/irritation:

The substance is not classified for eye damage/irritation according to Regulation (EC) No 1272/2008.

Method: Draize Test

Species: rabbit (Vienna White)

Results: not irritating

Skin sensitization:

The substance is not classified for skin sensitization according to Regulation (EC) No 1272/2008.

Buehlertest

Method: EU Method B.6 (Skin Sensitisation)

Species: guinea pig (Dunkin-Hartley) male

Routes of administration: Induction: epicutaneous, occlusive; Challenge: epicutaneous, occlusive

Results: not sensitizing (read-across)

Respiratory sensitization:

The substance is not classified for respiratory sensitization according to Regulation (EC) No 1272/2008.

Method: Topical application (and challenge) of test substances to mice followed by measurements of total serum IgE. In addition, auricular lymph nodes were harvested for measurement of IL-4 and IL-13 proteins and their corresponding messenger RNAs. Because skin absorption of high molecular weight phthalates is limited, liver weight increase, a measure of peroxisomal proliferation, was monitored to assure that internal dosing had been achieved.

Species: mouse (B6C3F1)

Routes of administration: Induction: dermal; Challenge: application to ear

Results: not sensitizing (read-across)

Germ cell mutagenicity:

The substance is not classified for germ cell mutagenicity according to Regulation (EC) No 1272/2008.

Bacterial reverse mutation assay (e.g. Ames test) (gene mutation)

Method: OECD Guideline 471 (Bacterial Reverse Mutation Assay)

Species/strain: *S. typhimurium* TA1535, TA1537, TA98 and TA100 (met. act.: with and without), *S. typhimurium* TA 1538 (met. act.: with and without)

Doses: Initial assay: 0.5, 5, 50, 500 and 5000 micrograms/plate

Repeat assay: 250, 500, 1000, 2500 and 5000 micrograms/plate

Results:

negative for *S. typhimurium* TA 1535, TA 1537, TA 98 and TA 100 (all strains/cell types tested); met. act.: with and without; cytotoxicity: not determined (read-across)

negative for *S. typhimurium* TA 1538 (strain/cell type:); met. act.: with and without; cytotoxicity: not determined (read-across) In vitro mammalian chromosome

aberration test (chromosome aberration)

Method: OECD Guideline 473 (In vitro Mammalian Chromosome Aberration Test)

Species/strain: Chinese hamster Ovary (CHO) (met. act.: with and without)

Doses: 0 (vehicle control), 5, 10, 20, 40, 80 and 160 micrograms/ml

Results:

negative for Chinese hamster Ovary (CHO) (all strains/cell types tested); met. act.: with and without; cytotoxicity: yes (read-across)

Mammalian cell gene mutation assay (L5178 mouse lymphoma mammalian cell mutation assay and the Balb/3T3 cell transformation assay)

Method: OECD Guideline 476 (In vitro Mammalian Cell Gene Mutation Test)

Species/strain:

mouse lymphoma L5178Y cells (met. act.: with and without)

mammalian cell line, other: Balb/3T3 (met. act.: not applicable)

Doses:

L5178Y Mouse Lymphoma Assay - 1.5, 3, 4, 5, 6, 8 ul/ml media

Balb/3T3 Transformation Assay - 0.125, 0.398, 1.250, 2.50, 3.750 ul/ml media

Results:

negative for mouse lymphoma L5178Y cells; met. act.: not applicable; cytotoxicity: yes (read-across)

negative for mammalian cell line, other: Balb/3T3 (read-across)

Carcinogenicity:

The substance is not classified for carcinogenicity according to Regulation (EC) No 1272/2008. Findings are not regarded as relevant to humans.

Method: EPA OTS 798.3300 (Carcinogenicity)

Species/strain: rat (Fischer 344) male/female

Routes of administration: oral: feed

Doses:

ca. 29.2, 88.3, 358.7, and 733.2 mg/kg bw/d for males and ca. 36.4, 108.6, 442.2, and 885.4 mg/kg bw/d for females (actual ingested)

500, 1500, 6000, 12000 ppm (nominal in diet)

Exposure: 104 weeks for the test groups and 78 weeks for the recovery group (high dose level) (7 days per week)

Results:

NOAEL (carcinogenicity): 88.3 mg/kg bw/day (actual dose received) (male) (mononuclear cell leukemia (nominal dose: 1500ppm))

NOAEL (carcinogenicity): 108.6 mg/kg bw/day (actual dose received) (female) (mononuclear cell leukemia (nominal dose: 6000ppm))

NOAEL (toxicity): 88.3 mg/kg bw/day (actual dose received) (male) (liver and kidney toxicity)

NOAEL (toxicity): 108.6 mg/kg bw/day (actual dose received) (female) (liver and kidney toxicity)

Reproductive toxicity:

The substance is not classified for reproductive toxicity according to Regulation (EC) No 1272/2008. Effects

onfertility

Method: EC Dangerous Substances Directive (67/548/EEC), Annex V, Part B; 1987, EPA OTS 798.4700 (Reproduction and Fertility Effects)

Species: rat (Sprague-Dawley) male/female

Routes of administration: oral: feed

Doses: 0.2, 0.4, 0.8 (nominal in diet (% DINP))

Exposure: Constant exposure up to about 10 weeks prior to mating, continuing throughout the mating period. Males were sacrificed after mating but treatment of the females continued throughout gestation and lactation until weaning of the offspring on postnatal day (PND) 21. (constant exposure 7 days/week)

Results:

NOAEL (P): ca. 500 mg/kg bw/day (nominal) (male/female) (body weight gain) (read-across)

NOAEL (F1): ≥ 200 - ≤ 260 mg/kg bw/day (nominal) (female) (bodyweight gain) (read-across)

NOAEL (P): 1000 mg/kg bw/day (nominal) (male/female) (Fertility - No adverse effects observed.) (read-across)

BMC05 (F1): ≥ 200 - ≤ 260 mg/kg bw/day (male/female) (The 95% lower confidence limit for a 5% reduction in the predicted body weights ranges from 0.16 to 0.21 % in the diet.) (read-across)

No statistically significant differences were observed in reproduction indices indicating a reproductive NOAEL of 0.8% (1000 mg/kg/day).

Developmental toxicity

Method: OECD Guideline 414 (Prenatal Developmental Toxicity Study)

Species: rat (Wistar)

Routes of administration: oral: gavage

Doses: 40, 200, 1000 mg/kg/d

Exposure: day 6 through 15 post coitum (p.c.) (daily)

Results:

NOEL (maternal toxicity): 200 mg/kg bw/day

NOAEL (teratogenicity): 1000 mg/kg bw/day

STOT-single exposure:

Substance is not classified for specific target organ toxicity after single exposure according to Regulation (EC) No. 1272/2008.

STOT-repeated exposure:

The substance is not classified for repeated dose toxicity according to Regulation (EC) No 1272/2008.

Repeated dose toxicity:oral

Method: OECD Guideline 452 (Chronic Toxicity Studies)

Species: rat (Fischer 344) male/female

Routes of administration: oral: feed

Doses:

ca. 29.2, 88.3, 358.7, and 733.2 mg/kg bw/d for males and ca. 36.4, 108.6, 442.2, and 885.4 mg/kg bw/d for females (actual ingested)

500, 1500, 6000, 12000 ppm (nominal in diet)

Exposure: 104 weeks for the test groups and 78 weeks for the recovery group (high dose level) (7 days per week)

Results:

NOAEL: ca. 88.3 mg/kg bw/day (actual dose received) (male) (liver and kidney toxicity, mononuclear cell leukemia)

NOAEL: ca. 108.6 mg/kg bw/day (actual dose received) (female) (liver and kidney toxicity, mononuclear cell leukemia)

Repeated dose toxicity:inhalation

Method: no data

Species: rat (Sprague-Dawley) male

Routes of administration: inhalation: aerosol (whole body)

Doses: 500 mg/m³ (nominal conc.)

Exposure: 5 consecutive days, 2 days recovery and another 5 days exposure (10 total exposures) (6 hours/ day)

Results: NOAEC: 500 mg/m³ air (male) (No systemic toxicity) (read-across)

Repeated dose toxicity:dermal

Method: A standard design for repeat dermal application toxicity study.

Species: rabbit (New Zealand White) male/female

Routes of administration: coverage: occlusive

Exposure: 24 hours per day, five days per week for six weeks (Once a day, five days a week)

Results: NOAEL (systemic): ca. 500 mg/kg bw/day (nominal) (Mild dermal irritation, but no systemic effects on kidney or liver) (read-across)

Aspiration hazard:

The substance is not classified for aspiration hazard according to Regulation (EC) No 1272/2008.

12. Ecological Information

Toxicity:

The substance is not classified as hazardous to the aquatic environment according to Regulation (EC) No. 1272/2008.

Short-term toxicity to fish

LC₅₀ (96h) for freshwater fish (*Brachydanio rerio* (new name: *Danio rerio*)), semi-static: > 102 mg/L test mat. (meas. (arithm. mean))

Long-term toxicity to fish

NOEC (284d) for freshwater fish (*Oryzias latipes*), life cycle: reproduction, (sub)lethal effects, flow-through: >= 18.5 - <= 24.5 µg/g feed test mat. (meas. (not specified)) based on: survival, development, reproduction, carcinogenicity (read-across)

Short-term toxicity to aquatic invertebrates

EC₅₀ (24h) for freshwater invertebrates (*Daphnia magna*), static: > 74 mg/L test mat. (meas. (geom. mean)) based on: mobility

EC₅₀ (48h) for freshwater invertebrates (*Daphnia magna*), static: > 74 mg/L test mat. (meas. (geom. mean)) based on: mobility

Long-term toxicity to aquatic invertebrates

NOEC (21d) for freshwater invertebrates (*Daphnia magna*), semi-static: > 101 mg/L test mat. (meas. (arithm. mean)) based on: reproduction

Toxicity to algae/aquatic plants

EC₅₀ (72h) for freshwater algae (*Desmodesmus subspicatus* (reported as *Scenedesmus subspicatus*)), static: > 88 mg/L test mat. (meas. (geom. mean)) based on: growth rate

EC₅₀ (72h) for freshwater algae (*Desmodesmus subspicatus* (reported as *Scenedesmus subspicatus*)), static: > 88 mg/L test mat. (meas. (geom. mean)) based on: biomass

NOEC (72h) for freshwater algae (*Desmodesmus subspicatus* (reported as *Scenedesmus subspicatus*)), static: 88 mg/L test mat. (meas. (geom. mean)) based on: cell number

Toxicity to sediment organisms

NOEC (10d) for freshwater sediment organisms (*Chironomus tentans*), static: 2680 mg/kg sediment dw test mat. (meas. (arithm. mean)) based on: mortality; growth (read-across)

LC₅₀ (10d) for freshwater sediment organisms (*Chironomus tentans*), static: > 2680 mg/kg sediment dw test mat. (meas. (arithm. mean)) based on: mortality; growth (read-across)

NOEC (10d) for freshwater sediment organisms (*Hyalella azteca*), static: 2900 mg/kg sediment dw test mat. (meas. (arithm. mean)) based on: mortality; growth (read-across)

LC₅₀ (10d) for freshwater sediment organisms (*Hyalella azteca*), static: > 2900 mg/kg sediment dw test mat. (meas. (arithm. mean)) based on: mortality; growth (read-across)

Toxicity to other aquatic organisms

NOEC (21d) for freshwater aquatic organisms (*Rana arvalis*), static: 858 mg/kg sediment dw test mat. (meas. (arithm. mean)) based on: frog-egg hatching (read-across)

NOEC (35d) for freshwater aquatic organisms (*Rana arvalis*), static: 858 mg/kg sediment dw test mat. (meas. (arithm. mean)) based on: tadpole survival and growth (read-across)

Toxicity to terrestrial plants

NOEC (22d) for terrestrial plants (*Lepidum sativum*), artificial soil: 1000 mg/kg soil d.w. test mat. (nominal)

NOEC (22d) for terrestrial plants (*Triticum aestivum*), artificial soil: 1000 mg/kg soil d.w. test mat. (nominal)

NOEC (22d) for terrestrial plants (*Lactuca sativa*), artificial soil: 1000 mg/kg soil d.w. test mat. (nominal)

NOEC (28d) for terrestrial plants (*Lactuca sativa*), natural soil: 1387 mg/kg soil d.w. test mat. (meas. (arithm. mean)) based on: germination (read-across)

NOEC (28d) for terrestrial plants (*Lactuca sativa*), natural soil: 1387 mg/kg soil d.w. test mat. (meas. (arithm. mean)) based on: growth (read-across)

Toxicity to soil micro-organisms

NOEC (33d), soil: 9616 mg/kg soil d.w. test mat. (meas. (initial)) based on: respiration rate (read-across)

Toxicity to aquatic micro-organisms

NOEC (30 min), activated sludge of a predominantly domestic sewage: 83.9 mg/L test mat. (meas. (initial)) based on: respiration rate (read-across)

EC₅₀ (30 min), activated sludge of a predominantly domestic sewage: > 83.9 mg/L test mat. (meas. (initial)) based on: respiration rate (read-across)

Persistence and degradability:

Hydrolysis: Hydrolysis will not significantly contribute to the removal of DINP from the environment.

Half-life (DT50): t_{1/2} (pH 7): 3.43 yr at 25 °C (estimated by calculation)

t_{1/2} (pH 8): 125.19 d at 25 °C (estimated by calculation)

Phototransformation in air: Half-life (DT50): 5.5 h (estimated by calculation)

Phototransformation in water: Direct photolysis will not contribute to the degradation of DINP in the aquatic environment because it does not absorb light at wavelengths >290 nm, i.e., in the range that contribute to this process.

Phototransformation in soil: Direct photolysis will not contribute to the degradation of DINP in the terrestrial environment because it does not absorb light at wavelengths >290 nm, i. e., in the range that contribute to this process.

Biodegradation in water: Substance is readily biodegradable.

Ready biodegradability (EU Method C.4-C (Determination of the "Ready" Biodegradability - Carbon Dioxide Evolution Test)), activated sludge, domestic, non-adapted: 81% after 28 d (CO₂ evolution)

Half-life (DT50) (simulation test followed sound scientific testing principles for determining biodegradability in sediment): 23 h in sediment (read-across from supporting substance)

Biodegradation in soil: Half-life: 51 days Degradation rate in water: T

$\frac{1}{2}$ = 10.3 d (readily biodegradable) Degradation rate in sediment: T

$\frac{1}{2}$ = 51 d (analogous from soil data) Degradation rate in soil: T

$\frac{1}{2}$ = 51 d Degradation rate in air: T

<u>Bio accumulative potential:</u>	Substance does not bioaccumulation as has been demonstrated in a lab study with fish (Oncorhynchus mykiss) fed a DINP containing diet (BCF<3 L/kg). Substance has a SBSAF value of <1 which indicates a lack of bioaccumulation.
<u>Mobility in Soil:</u>	log Koc :6 (estimated by calculation). Substance has the potential to sorb to organic matter.
<u>Results of PBT and vPvB assessment:</u>	Based on the assessment substance is in not considered as PBT / vPvB.
<u>Other adverse effects:</u>	No data available.

13. Disposal Considerations

Reclaim or Dispose of material in accordance with all applicable local, state, and federal regulations.

14. Transport Information

<u>D.O.T. Shipping Name</u>	Not restricted. Label: Product trade name with chemical description.
CANADA TRANSPORT HAZ.GOODS:	Not restricted.
AIR (IATA/ICAO):	Not restricted. Label: Product trade name with chemical description.
EUROPEAN TRANSPORTATION:	ADR/RID HAZ. CLASS: Not regulated.
US CUSTOMS: - HARMONIZED TARIFF CODE:	2917.33.00.50

15. Regulatory Information

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this material is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.

Complies with the following national/regional chemical inventory

requirements: AICS, DSL, ENCS, IECSC, KECI, PICCS, TSCA

EPCRA SECTION 302: This material contains no extremely hazardous substances.

SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.

SARA (313) TOXIC RELEASE INVENTORY: This material contains no chemicals subject to the supplier notification requirements of the SARA 313 Toxic Release Program.

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
1,2- BENZENEDICARBOXYLIC ACID, DI-C8-10- BRANCHED ALKYL ESTERS, C9-RICH	28553-12-0	10, 13, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL	6 = TSCA 5a2	11 = CA P65 REPRO	16 = MN RTK
2 = ACGIH A1	7 = TSCA 5e	12 = CA RTK	17 = NJ RTK
3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

Additional information:

For PVC Toys DINP is recommended, based on US Consumer Product Safety Commission review (2003) and on the EU Risk Assessment Report (2006). In the U.S., there is an interim prohibition on DINP and DIDP above 0.1 percent by weight (one thousand parts per million) in toys intended for children age 12 and under that can be placed in a child's mouth and child

care articles for children age 3 and under (H.R. 4040, The Consumer Product Safety Improvement Act of 2008). In the EU and Brazil, DINP and DIDP are permitted only for toys and child care articles that cannot be placed in the mouth. In Argentina and Japan, DINP and DIDP are permitted only for toys not intended to be placed in the mouth. In the state of Washington, DEHP, DBP, BBP, DINP, DIDP, and DnOP, individually or in combination, are not permitted in children's products at more than 0.1 percent by weight (HB 2647, Regarding the Children's Safe Products Act).

Although this chemical substance has been listed as a carcinogen under California Proposition 65, the requirement to provide a clear and reasonable warning, if necessary due to potential exposure considerations, will not come into effect until December 20, 2014.

Safety, health and environmental regulations/legislation specific for the substance or mixture:

Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/;

Regulation (EC) No 1272/2008 of the European parliament and of the Council of 16 December 2008 on classification, labeling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006;

COMMISSION REGULATION (EU) No 453/2010 of 20 May 2010 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH);

COUNCIL DIRECTIVE of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (67/548/EEC).

Authorisations: not required

Restrictions on the manufacture, placing on the market and use of Di-‘isononyl’ phthalate (DINP) according to Regulation (EC) 1907/2006, Annex XVII:

1. Shall not be used as substances or in mixtures, in concentrations greater than 0,1 % by weight of the plasticised material, in toys and childcare articles which can be placed in the mouth by children.
2. Such toys and childcare articles containing these phthalates in a concentration greater than 0,1 % by weight of the plasticised material shall not be placed on the market.
3. The Commission shall re-evaluate, by 16 January 2010, the measures provided for in relation to this entry in the light of new scientific information on such substances and their substitutes, and if justified, these measures shall be modified accordingly.
4. For the purpose of this entry ‘childcare article’ shall mean any product intended to facilitate sleep, relaxation, hygiene, the feeding of children or sucking on the part of children.

Chemical safety assessment:

A chemical safety assessment has been carried out for this substance.

16. Other Information

Abbreviations:

BCF: bioconcentration factor

BMC05: benchmark concentration for 5% response incidence

BSAF: biota-soil accumulation factor

DINP: Di-‘isononyl’ phthalate

DNEL: derived no effect level

EC₅₀: median effective concentration

LC₅₀: median lethal concentration

LD₅₀: median lethal dose

NOAEL: no observed adverse effect level

NOAEC: no observed adverse effect concentration

NOEC: no observed effect concentration

NOEL: no observed effect level

PBT: persistent, bioaccumulative, toxic chemical

PNEC: predicted no-effect concentration

vPvB: very persistent, very bioaccumulative chemical

Description of identified uses:

Identified use	Process category (PROC)	Preparation Category (PC)	Sector of Use (SU)	Article category (AC)
Phlegmatiser (to dilute organic peroxides)	Mixing of solids and liquids in open or closed batch process.	dispersant	C20 - manufacturing: manufacture of chemicals and chemical products	
		solvent	C20 - manufacturing: manufacture of chemicals and chemical products	
Construction Chemicals	Mixing of solids and liquids in open or closed batch process.	dispersant	C20 - manufacturing: manufacture of chemicals and chemical products	
		solvent	C20 - manufacturing: manufacture of chemicals and chemical products	
Manufacture of Coatings, Inks and Artist's Colours	Mixing of solids and liquids in open or closed batch process.	dispersant	C20.3 - manufacturing: manufacture of paints, varnishes and similar coatings, printing ink and mastics	
		solvent	C20.3 - manufacturing: manufacture of paints, varnishes and similar coatings, printing ink and mastics	
Preparation of Lubricants	Mixing of solids and liquids in open or closed batch process.	lubricating agent or slip promotor	C20 - manufacturing: manufacture of chemicals and chemical products	

Preparation of Adhesives	Mixing of solids and liquids in open or closed batch process.	adhesives, sealants	C20 - manufacturing: manufacture of chemicals and chemical products
		solvent	C20 - manufacturing: manufacture of chemicals and chemical products
Plasticiser for Polymers	Mixing of solids and liquids in open or closed batch process.	plasticizer	C22.2 - manufacturing: manufacture of plastics products

The above information has been compiled from what we believe to be credible sources. To our knowledge the information is accurate and reliable, however, it is not guaranteed. Any recommendations issued by HB Chemical personnel or literature is derived from experience and by no means should be taken as fact or construed as a recommendation to violate of any law, regulation or patent. It is the user's responsibility to determine the suitability of any HB supplied material in their application. The individual conditions of each customer are well outside of our control and we cannot be held liable for its functionality and use. Please contact our office should you need specific information beyond what is supplied above. As with all Chemical usage safety precautions beyond the stated are highly recommended. Information for this SDS supplied by Evonik.