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SECTION 1. IDENTIFICATION

| Trade name | : | ТВРЕН | |
|--|------|---|--|
| Other means of identification | : | No data available | |
| CAS-No. | : | 3006-82-4 | |
| Manufacturer or supplier's o | deta | ails | |
| Company name of supplier | : | United Initiators, Inc. | |
| Address | : | 555 Garden Street Elyria OH 44035 USA | |
| | | United Initiators Canada Ltd. 2147 PG Pulp Mill Road Prince George, BC-V2N 2S6 CANADA | |
| | | | |
| Telephone | : | +1-440-323-3112 | |
| Telefax | : | +1-440-323-2659 | |
| Emergency telephone | : | CHEMTREC US (24h): CHEMTREC WORLD (24h): CANUTEC (24h): | +1-800-424-9300 +1-703-527-3887 1-613-996-6666 |
| For Transportation Incidents | : | TERRAPURE EMERGENCY RESPON 1-800-567-7455 | NSE SERVICES (24h): |
| E-mail address of person responsible for the SDS | : | cs-initiators.nafta@united-in.com | |
| Recommended use of the class of | | nical and restrictions on use polymerization initiators | |

SECTION 2. HAZARDS IDENTIFICATION

| GHS classification in accordance with the Hazardous Products Regulations | | | | | |
|--|---|------------|--|--|--|
| Flammable liquids | : | Category 4 | | | |
| Organic peroxides | : | Туре С | | | |
| Skin sensitization | : | Category 1 | | | |

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| Repro | oductive toxicity | : Category | 1B |
| Short hazar | -term (acute) aquatic rd | : Category | 1 |
| Long- hazar | -term (chronic) aquatic rd | : Category | 2 |
| | label elements rd pictograms | | |
| Signa | al Word | : Danger | |
| Haza | rd Statements | H242 Hea H317 May H360F Ma H400 Ver | nbustible liquid. ting may cause a fire. v cause an allergic skin reaction. ay damage fertility. y toxic to aquatic life. ic to aquatic life with long lasting effects. |
| Preca | autionary Statements | · Preventio | on: |
| | | P202 Do and under P210 Kee and other P234 Kee P240 Gro P261 Avo P272 Con the workp P273 Avo P280 Wea | p away from heat, hot surfaces, sparks, open flames ignition sources. No smoking. p only in original packaging. und and bond container and receiving equipment. d breathing mist or vapors. taminated work clothing should not be allowed out of |
| | | Response | : |
| | | P308 + P3 attention. P333 + P3 attention. P362 + P3 reuse. P370 + P3 foam, dry | 352 IF ON SKIN: Wash with plenty of water. 313 IF exposed or concerned: Get medical advice/ 313 If skin irritation or rash occurs: Get medical advice 364 Take off contaminated clothing and wash it before 378 In case of fire: Use water spray, alcohol-resistant chemical or carbon dioxide to extinguish. act spillage. |

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Storage:

- P403 Store in a well-ventilated place.
- P405 Store locked up.
- P410 Protect from sunlight.
- P411 Store at temperatures not exceeding < 10 $^{\circ}C/$ < 50 $^{\circ}F$.
- P420 Store separately.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

| Substance / Mixture | : | Substance |
|---------------------|---|-----------------------------------|
| Chemical nature | : | Organic Peroxide liquid |
| Substance name | : | tert-Butyl 2-ethylperoxyhexanoate |
| CAS-No. | : | 3006-82-4 |
| Common Name/Synonym | : | No data available |

Components

| | Common Name/Synonym | CAS-No. | Concentration (% w/w) |
|----------------------|--|-----------|-----------------------|
| ethylperoxyhexanoate | tert-Butyl 2- ethylperoxy- hexanoate | 3006-82-4 | <= 100 * |

Actual concentration or concentration range is withheld as a trade secret

SECTION 4. FIRST AID MEASURES

| General advice | Take off contaminated clothing and shoes immediately. Call a physician immediately. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and seek medical action |
|----------------|--|
| | advice. Move out of dangerous area. |

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| | | | | Show this materia attendance. Do not leave the v | I safety data sheet to the doctor in <i>i</i> ctim unattended. |
| lf | If inhaled | | Administer oxygen if breathing is difficult or cyanosis observed. If breathed in, move person into fresh air. If not breathing, give artificial respiration. If unconscious, place in recovery position and seek advice. If symptoms persist, call a physician. | | ve person into fresh air. ive artificial respiration. ace in recovery position and seek medical |
| Ir | In case of skin contact | | : | In case of contact for at least 15 min and shoes. | |
| Ir | n case | of eye contact | : | of water and seek Remove contact le Protect unharmed Keep eye wide op | enses. eye. |
| lf | f swallo | wed | : | Call a physician ir Keep respiratory t If symptoms persi | |
| а | | portant symptoms cts, both acute and | : | May cause an alle May damage fertil sensitizing effects | lity. |
| F | Protecti | on of first-aiders | : | | ers should pay attention to self-protection nmended protective clothing |
| Ν | Notes to | o physician | : | Treat symptomation | cally and supportively. |

SECTION 5. FIRE-FIGHTING MEASURES

| Suitable extinguishing media | : | Water spray jet Alcohol-resistant foam Carbon dioxide (CO2) Dry chemical |
|--------------------------------|---|---|
| Unsuitable extinguishing media | : | High volume water jet |
| Specific hazards during fire | : | Risk of explosion if heated under confinement. |

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| fighting | | | lead to a dangerou Avoid confinement Contact with incor temperatures exce | npatible materials or exposure to eeding SADT may result in a self- mposition reaction with release of flammable | |
| | | | | Do not allow run-c courses. Vapors may form The product will fl water. | s violently. le over considerable distance. ff from fire fighting to enter drains or water explosive mixtures with air. pat on water and can be reignited on surface iners exposed to fire with water spray. |
| | Specific ods | extinguishing meth- | : | fire. Remove undamag so. | water stream as it may scatter and spread ed containers from fire area if it is safe to do o cool unopened containers. |
| | Further | information | : | circumstances and Use a water spray Collect contamina must not be disch Fire residues and | measures that are appropriate to local d the surrounding environment. to cool fully closed containers. ted fire extinguishing water separately. This arged into drains. contaminated fire extinguishing water must accordance with local regulations. |
| | Special for fire-f | protective equipment ighters | : | Wear self-containe necessary. Use personal prot | ed breathing apparatus for firefighting if ective equipment. |

SECTION 6. ACCIDENTAL RELEASE MEASURES

| Personal precautions, protec- : tive equipment and emer- gency procedures | Follow safe handling advice and personal protective equipment recommendations. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas. Use personal protective equipment. Remove all sources of ignition. Never return spills in original containers for re-use. Treat recovered material as described in the section "Disposal considerations". |
|---|--|
| Environmental precautions : | Prevent product from entering drains. Prevent further leakage or spillage if safe to do so. If the product contaminates rivers and lakes or drains inform respective authorities. |

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| | ds and materials for nment and cleaning up | decomposition at Clear spills imme Suppress (knock jet. To clean the floor material, use pler Soak up with iner Isolate waste and Non-sparking too Local or national disposal of this m employed in the o | diately. down) gases/vapors/mists with a water spray and all objects contaminated by this nty of water. t absorbent material. |

SECTION 7. HANDLING AND STORAGE

| Technical measures | : | See Engineering measures under EXPOSURE CONTROLS/PERSONAL PROTECTION section. |
|---|---|---|
| Advice on protection against fire and explosion | : | Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors). Keep away from heat and sources of ignition. Use only explosion-proof equipment. Keep away from open flames, hot surfaces and sources of ignition. Keep away from combustible material. Do not spray on a naked flame or any incandescent material. |
| Advice on safe handling | : | Open drum carefully as content may be under pressure. Protect from contamination. Do not breathe vapors/dust. Avoid exposure - obtain special instructions before use. Avoid contact with skin and eyes. Avoid formation of aerosol. Take precautionary measures against static discharges. Never return any product to the container from which it was originally removed. Provide sufficient air exchange and/or exhaust in work rooms. Avoid confinement. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Smoking, eating and drinking should be prohibited in the application area. Wash thoroughly after handling. For personal protection see section 8. Persons susceptible to skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being |

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| | | | | used. | |
| | Conditions for safe storage | | : | Store in cool place Keep in a well-ven Contamination ma closed containers Observe label pre Store in accordance Avoid impurities (e Electrical installation the technological | ightly closed in a cool, well-ventilated place. e. tilated place. ay result in dangerous pressure increases - may rupture. cautions. ce with the particular national regulations. e.g. rust, dust, ash), risk of decomposition. ions / working materials must comply with safety standards. are opened must be carefully resealed and |
| | Materia | ls to avoid | : | | combustible materials. strong acids, bases, heavy metal salts and bstances. |
| | Recomi perature | mended storage tem- | : | < 10 °C | |
| | | | | < 50 °F | |
| | Further age sta | information on stor- bility | : | Stable under reco | mmended storage conditions. |

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

| Ingredients with workplace control parameters Contains no substances with occupational exposure limit values. | | | | | |
|--|--|--|--|--|--|
| | Engineering measures : Minimize workplace exposure concentrations. | | | | |
| 0 0 | | | | | |
| Personal protective equipm | ent | | | | |
| Respiratory protection | : | In the case of dust or aerosol formation use respirator with an approved filter. | | | |
| Filter type | : | ABEK-filter | | | |
| | | Use NIOSH approved respiratory protection. | | | |
| Hand protection Material Break through time | - | Nitrile rubber 480 min | | | |

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| | Glove thickness | : | 0.40 mm | |
| | Material Break through time Glove thickness | : | butyl-rubber 480 min 0.47 mm | |
| | Remarks | : | standard values! material has to b protective glove. chemicals depen hazardous subst For special appl resistance to che gloves with the g | break through time/strength of material are The exact break through time/strength of be obtained from the producer of the Choose gloves to protect hands against ading on the concentration and quantity of the cance and specific to place of work. ications, we recommend clarifying the emicals of the aforementioned protective glove manufacturer. Wash hands before e end of workday. |
| Ey | e protection | : | to the workstatio Please follow all selecting protect Always wear eye eye contact with Tightly fitting saf Please wear suit | applicable local/national requirements when ive measures for a specific workplace. e protection when the potential for inadvertent the product cannot be excluded. |
| Sk | in and body protection | : | resistance data a potential. Additional body task being perfor disposable suits Wear as appropr | te protective clothing based on chemical and an assessment of the local exposure garments should be used based upon the med (e.g., sleevelets, apron, gauntlets,) to avoid exposed skin surfaces. iate: antistatic protective clothing. |
| Pro | otective measures | : | | ective equipment must be selected according ion and amount of the dangerous substance orkplace. |
| Hy | giene measures | : | Keep away from When using do r When using do r | not eat or drink. |

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SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

| Appearance | : | liquid |
|---|---|--|
| Color | : | colorless |
| Odor | : | ester-like |
| Odor Threshold | : | No data available |
| рН | : | not determined substance/mixture is non-soluble (in water) |
| Melting point/freezing point | : | < -25 °C (1,013 hPa) |
| Initial boiling point and boiling range | : | Decomposition: Decomposes below the boiling point. |
| Flash point | : | 78 °C |
| | | Method: ISO 3679 |
| Evaporation rate | : | No data available |
| Flammability (liquids) | : | Organic peroxide |
| Self-ignition | : | The substance or mixture is not classified as pyrophoric. |
| Upper explosion limit / Upper flammability limit | : | not determined |
| Lower explosion limit / Lower flammability limit | : | not determined |
| Vapor pressure | : | 0.02 hPa (20 °C) |
| Relative vapor density | : | No data available |
| Relative density | : | not determined |
| Density | : | 0.9 g/cm3 (20 °C) |
| Solubility(ies) Water solubility | : | ca. 0.05 g/l insoluble (20 °C) |
| Autoignition temperature | : | not determined Decomposition |

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| | Self-Accelerating decomposi- tion temperature (SADT) | | : | Method: UN-Test SADT-Self Accel temperature at w | H.4 erating Decomposition Temperature. Lowest hich the tested package size will undergo a decomposition reaction. |
| N | Viscosity Viscosity, dynamic | | : | 3.7 mPa.s (20 °C | C) |
| | Viscosity, kinematic | | : | not determined | |
| I | Explosive properties | | : | ignition. | by shock, friction, fire or other sources of flammable/explosive vapor-air mixture. |
| (| Oxidizir | ng properties | : | The substance or Organic peroxide | r mixture is not classified as oxidizing. |
| Ş | Self-hea | ating substances | : | The substance or | r mixture is not classified as self heating. |
| I | Refractive index | | : | 1.428 (20 °C) | |

SECTION 10. STABILITY AND REACTIVITY

| Reactivity | : | Stable under recommended storage conditions. Heating may cause a fire or explosion. |
|---|---|--|
| Chemical stability | : | Stable under recommended storage conditions. No decomposition if stored normally. |
| Possibility of hazardous reac- tions | : | Vapors may form explosive mixture with air. |
| Conditions to avoid | : | Protect from contamination. Contact with incompatible substances can cause decomposition at or below SADT. Heat, flames and sparks. Avoid confinement. |
| Incompatible materials | : | Accelerators, strong acids and bases, heavy metals and heavy metal salts, reducing agents |
| Hazardous decomposition products | : | Irritant, caustic, flammable, noxious/toxic gases and vapours can develop in the case of fire and decomposition |

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SECTION 11. TOXICOLOGICAL INFORMATION

| Acute toxicity Based on available data, the classification criteria are not met. | | | | |
|---|---|---|--|--|
| Product: | | | | |
| Acute oral toxicity | : | LD0 (Rat): >= 10,000 mg/kg Method: OECD Test Guideline 401 | | |
| Acute inhalation toxicity | : | LC50 (Rat): > 42.2 mg/l Exposure time: 4 h Test atmosphere: dust/mist | | |
| Acute dermal toxicity | : | LD50 (Rabbit): 16,818 mg/kg Method: OECD Test Guideline 402 | | |

Components:

tert-Butyl 2-ethylperoxyhexanoate:

| Acute oral toxicity | : | LD50 (Rat): >= 10,000 mg/kg Method: OECD Test Guideline 401 Assessment: The substance or mixture has no acute oral tox- icity Remarks: No mortality observed at this dose. |
|---------------------------|---|--|
| Acute inhalation toxicity | : | LC50 (Rat): > 42.2 mg/l Exposure time: 4 h Test atmosphere: dust/mist |
| Acute dermal toxicity | : | LD50 (Rabbit): 16,820 mg/kg Method: OECD Test Guideline 402 |

Skin corrosion/irritation

Based on available data, the classification criteria are not met.

| Product: | | |
|----------|---|---|
| | - | Rabbit OECD Test Guideline 404 No skin irritation |
| Remarks | : | May cause skin irritation in susceptible persons. |

Components:

tert-Butyl 2-ethylperoxyhexanoate:

| Species | : | Rabbit |
|---------|---|-------------------------|
| Method | : | OECD Test Guideline 404 |
| Result | : | No skin irritation |

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Serious eye damage/eye irritation

Based on available data, the classification criteria are not met.

Product:

| Species Result Method | | Rabbit No eye irritation OECD Test Guideline 405 |
|-----------------------------|---|---|
| Remarks | : | Vapors may cause irritation to the eyes, respiratory system and the skin. |

Components:

tert-Butyl 2-ethylperoxyhexanoate:

| Species | : | Rabbit |
|---------|---|-------------------------|
| Result | : | No eye irritation |
| Method | : | OECD Test Guideline 405 |

Respiratory or skin sensitization

Skin sensitization

May cause an allergic skin reaction.

Respiratory sensitization

Not classified due to lack of data.

Product:

| Species | : | Guinea pig |
|---------|---|--|
| Method | : | OECD Test Guideline 406 |
| Result | : | May cause sensitization by skin contact. |

Remarks

: Causes sensitization.

Components:

tert-Butyl 2-ethylperoxyhexanoate:

| Species | : | Guinea pig |
|---------|---|--|
| Method | : | OECD Test Guideline 406 |
| Result | : | May cause sensitization by skin contact. |

Germ cell mutagenicity

Not classified due to lack of data.

Product:

| Genotoxicity in vitro | : | Test Type: Bacterial reverse mutation assay (AMES) |
|-----------------------|---|--|
| | | Method: OECD Test Guideline 471 |
| | | Result: positive |

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| | | | <i>i</i> tro mammalian cell gene mutation test D Test Guideline 476 | | | | |
| Geno | toxicity in vivo | : Species: Mous Application Ro Method: OECI | Species: Mouse Application Route: Ingestion Method: OECD Test Guideline 474 Result: negative | | | | |
| <u>Com</u> | ponents: | | | | | | |
| tert-E | Butyl 2-ethylperoxyh | exanoate: | | | | | |
| | toxicity in vitro | : Test Type: Ba | cterial reverse mutation assay (AMES) D Test Guideline 471 e | | | | |
| | | | <i>i</i> tro mammalian cell gene mutation test D Test Guideline 476 e | | | | |
| Geno | toxicity in vivo | : Species: Mous Application Ro Method: OECI Result: negativ | ute: Ingestion) Test Guideline 474 | | | | |
| Carci | inogenicity | | | | | | |
| Not c | lassified due to lack o | f data. | | | | | |
| Prod | | | | | | | |
| Rema | arks | : This informatio | This information is not available. | | | | |
| <u>Com</u> | ponents: | | | | | | |
| tert-E | Butyl 2-ethylperoxyh | exanoate: | | | | | |
| Rema | arks | : This information | n is not available. | | | | |
| - | oductive toxicity damage fertility. | | | | | | |
| Prod | uct: | | | | | | |
| Effect | ts on fertility | test Species: Rat Application Ro General Toxici | oroduction/Developmental toxicity screening ute: Oral ty Parent: NOAEL: 300 mg/kg body weight D Test Guideline 421 | | | | |
| | | Test Type: On Species: Rat Application Ro | e-generation reproduction toxicity study ute: Oral | | | | |
| | | | | | | | |

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| | | | | General Toxicity F Fertility: NOAEL N | Parent: NOAEL: 300 mg/kg body weight F1: NOAEL: 300 mg/kg body weight Mating/Fertility: 100 mg/kg body weight Development: NOAEL F2: 300 mg/kg body est Guideline 443 |
| | Effects | on fetal development | : | Species: Rat Application Route Embryo-fetal toxic body weight Method: OECD Te | ity.: NOAEL Mating/Fertility: 1,000 mg/kg |
| | Reprod sessme | uctive toxicity - As- ent | : | | adverse effects on sexual function and animal experiments. |
| | <u>Compc</u> | onents: | | | |
| | tert-Bu | tyl 2-ethylperoxyhex | ano | ate: | |
| | Effects | on fertility | : | test Species: Rat Application Route | Parent: NOEL: 300 mg/kg body weight |
| | | | | Species: Rat Application Route General Toxicity F General Toxicity F Fertility: NOAEL M | Parent: NOAEL: 300 mg/kg body weight F1: NOAEL: 300 mg/kg body weight /lating/Fertility: 100 mg/kg body weight Development: NOAEL F2: 300 mg/kg body |
| | Effects | on fetal development | : | • | /aternal: NOAEL: 30 mg/kg body weight xicity: NOAEL: 100 mg/kg body weight |
| | | | | - | /aternal: NOEL: 400 mg/kg body weight oxicity: NOEL: 400 mg/kg body weight |
| | Reprod | uctive toxicity - As- | : | Clear evidence of | adverse effects on sexual function and |

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| sessr | nent | | fertility, based o | n animal experiments. |
| | | | | |
| | -single exposure | | | |
| Not cl | lassified due to lack o | f data. | | |
| Produ | | | | |
| Rema | arks | : | No data available | 9 |
| <u>Com</u> | <u>oonents:</u> | | | |
| tert-B | Butyl 2-ethylperoxyh | exano | ate: | |
| Rema | arks | : | No data available | 9 |
| STOT | -repeated exposure | | | |
| Not c | lassified due to lack o | f data. | | |
| Produ | uct: | | | |
| Rema | arks | : | No data available | 9 |
| <u>Com</u> | oonents: | | | |
| tert-B | Butyl 2-ethylperoxyh | exano | ate: | |
| Rema | arks | : | No data available | 9 |
| Repe | ated dose toxicity | | | |
| Produ | uct: | | | |
| Speci | | : | Rat, male | |
| NOAE | | : | 316 mg/kg | |
| Expos Metho | sure time | : | 28 d OECD Test Guid | deline 407 |
| Meth | Ju | • | OLCD Test Guid | |
| Speci | | : | Rat, female | |
| NOAE | | : | 100 mg/kg | |
| Expos Metho | sure time | : | 28 d OECD Test Guid | deline 407 |
| Meth | bu | • | OLOD Test Out | |
| | | | | |
| Speci | | : | Rat | |
| NOAE | EL | : | 450 mg/kg | |
| | EL | : | | deline 408 |
| NOAE Metho | EL | : | 450 mg/kg | deline 408 |
| NOAE Metho <u>Com</u> | EL od | : : : exano | 450 mg/kg OECD Test Guid | deline 408 |
| NOAE Metho <u>Com</u> | EL od oonents: Butyl 2-ethylperoxyhd | : : exano : | 450 mg/kg OECD Test Guid | deline 408 |
| NOAE Metho <u>Comp</u> tert-B | EL od oonents: Butyl 2-ethylperoxyho ies | : : : : : : | 450 mg/kg OECD Test Guid ate: | deline 408 |
| NOAE Metho Comp tert-B Speci NOAE | EL od ponents: Butyl 2-ethylperoxyho ies EL sure time | : : exano : : : | 450 mg/kg OECD Test Guid ate: Rat, male | |

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| | | | | |
| Spec NOA Expo Meth | EL sure time | : : : | Rat, female 100 mg/kg 28 d OECD Test G | uideline 407 |
| Spec NOA Meth | EL | : | Rat 450 mg/kg OECD Test G | uideline 408 |
| Not c | ration toxicity classified due to lack | of data. | | |
| | ner information | | | |
| <u>Prod</u> Rema | | : | No data availa | ble |

SDS Number:

SECTION 12. ECOLOGICAL INFORMATION

| Ecotoxicity | | |
|---|---|--|
| <u>Product:</u> Toxicity to fish | : | LC50 (Oncorhynchus mykiss (rainbow trout)): 8.66 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 |
| | | NOEC (Poecilia reticulata (guppy)): 2.10 mg/l Exposure time: 96 h Method: OECD Test Guideline 203 |
| Toxicity to daphnia and other aquatic invertebrates | : | EC50 (Daphnia magna (Water flea)): 7.5 mg/l Exposure time: 48 h Method: OECD Test Guideline 202 |
| Toxicity to algae/aquatic plants | : | EC50 (Raphidocelis subcapitata (freshwater green alga)): 0.44 mg/l Exposure time: 72 h Test Type: Growth inhibition Method: OECD Test Guideline 201 GLP: yes |
| | | NOEC (Raphidocelis subcapitata (freshwater green alga)): 0.018 mg/l Exposure time: 72 h Test Type: Growth inhibition Method: OECD Test Guideline 201 GLP: yes |

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| | | | | | |
| | | to daphnia and other invertebrates (Chron- ty) | : | NOEC (Daphnia r Exposure time: 21 Method: OECD Te | |
| | | | | LOEC (Daphnia n Exposure time: 21 Method: OECD Te | |
| | Toxicity | to microorganisms | : | EC50: 64 mg/l Exposure time: 0. Method: OECD Te | |
| | Ecotoxi | icology Assessment | | | |
| | Acute a | quatic toxicity | : | Very toxic to aqua | tic life. |
| | Chronic | aquatic toxicity | : | Toxic to aquatic li | fe with long lasting effects. |
| | <u>Compo</u> | <u>nents:</u> | | | |
| | tert-But | tyl 2-ethylperoxyhexa | ano | ate: | |
| | Toxicity | to fish | : | LC50 (Oncorhync Exposure time: 96 Method: OECD Te | |
| | | | | NOEC (Poecilia re Exposure time: 96 Method: OECD Te | |
| | | to daphnia and other invertebrates | : | EC50 (Daphnia m Exposure time: 48 Method: OECD Te | |
| | Toxicity plants | to algae/aquatic | : | EC50 (Raphidocel 0.44 mg/l Exposure time: 72 Test Type: Growth Method: OECD Te GLP: yes | n inhibition |
| | | | | NOEC (Raphidoce 0.018 mg/l Exposure time: 72 Test Type: Growth Method: OECD Te GLP: yes | n inhibition |
| | M-Facto icity) | or (Acute aquatic tox- | : | 1 | |

according to the Hazardous Products Regulations



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|-----------------------|---|----------|---|---|
| | ity to daphnia and other tic invertebrates (Chron- icity) | : | Exposure time: 2 Method: OECD T | est Guideline 211 nagna (Water flea)): 0.87 mg/l 1 d |
| Toxici | ity to microorganisms | : | Exposure time: 0. | 5 h est Guideline 209 |
| | e aquatic toxicity | : | Very toxic to aqua | itic life. |
| Chron | nic aquatic toxicity | : | Toxic to aquatic li | fe with long lasting effects. |
| Persi | stence and degradabil | ity | | |
| <u>Prode</u> Biode | <u>uct:</u> egradability | : | Exposure time: 24 Method: OECD T GLP: yes Remarks: Accord | 65 % (Theoretical oxygen demand) |
| <u>Com</u> p | ponents: | | | |
| | Butyl 2-ethylperoxyhexa egradability | ano : | Theoretical oxyge Result: rapidly bio Biodegradation: Exposure time: 24 Method: OECD T GLP: yes Remarks: Accord | odegradable 65 % |
| Bioad | ccumulative potential | | | |
| <u>Prodi</u> Bioac | <u>uct:</u> ccumulation | : | Bioconcentration Method: QSAR | factor (BCF): 202.4 |
| <u>Com</u> r | ponents: | | | |
| tert-B | Butyl 2-ethylperoxyhexa | ano | ate: | |

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| Bio | accumulation | : Bioconcentr Method: QS | ation factor (BCF): 202.4 AR |
| | bility in soil data available | | |
| Oth | er adverse effects | | |
| <u>Pro</u> | duct: | | |
| Adc mat | litional ecological infor- iion | unprofession Very toxic to | ental hazard cannot be excluded in the event of al handling or disposal. aquatic life. atic life with long lasting effects. |

SECTION 13. DISPOSAL CONSIDERATIONS

| Disposal methods | | |
|------------------------|---|---|
| Waste from residues | : | Dispose of wastes in an approved waste disposal facility. The product should not be allowed to enter drains, water courses or the soil. Do not contaminate ponds, waterways or ditches with chemical or used container. |
| Contaminated packaging | : | Dispose of in accordance with local regulations. Clean container with water. Dispose of contents/ container to an approved waste disposal plant. Empty remaining contents. Dispose of as unused product. Do not re-use empty containers. Do not burn, or use a cutting torch on, the empty drum. |

SECTION 14. TRANSPORT INFORMATION

| International Regulations | | | |
|---|--|--|--|
| UNRTDG UN number Proper shipping name | UN 3113 ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE CONTROLLED (1) TEMPERATURE (1) (1) (1) (1) (1) (1) (1) (1) (1) (1) | | |
| Class Packing group Labels Environmentally hazardous | (tert-BUTYL PEROXY-2-ETHYLHE XANOATE) 5.2 Not assigned by regulation 5.2 yes | | |
| IATA-DGR Not permitted for transport IMDG-Code | | | |
| 19 / 22 | | | |

according to the Hazardous Products Regulations



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|-----------------|------------------------------|-------|----------------------------------|----------------------------------|
| 5.2 | 08/02/2024 | | 0000001 | Date of first issue: 09/13/2017 |
| UN nur | nber | : OI | ONTROLLED | XIDE TYPE C, LIQUID, TEMPERATURE |
| Proper | shipping name | CC | | DXY-2-ETHYLHEXANOATE) |
| Labels EmS C | g group Code pollutant | : 5.2 | ot assigned by re 2 F, S-R | egulation |

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

Domestic regulation

TDG

| 100 | | |
|----------------------|---|--|
| UN number | : | UN 3113 |
| Proper shipping name | : | ORGANIC PEROXIDE TYPE C, LIQUID, TEMPERATURE |
| | | CONTROLLED |
| | | (tert-BUTYL PEROXY-2-ETHYLHEXANOATE) |
| Class | : | 5.2 |
| Packing group | : | |
| Labels | : | 5.2 |
| ERG Code | : | 148 |
| Marine pollutant | : | yes |
| | | |

Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

Additional advice

| Temperature controlled t | ransport.: |
|--------------------------|------------|
| Control temperature | : 20 °C |
| Emergency temperature | : 25 °C |

SECTION 15. REGULATORY INFORMATION

International Regulations

Gefahrgruppe nach TRGS 741: lb, S+ (German regulatory requirements) Produkt unterliegt dem Sprengstoffgesetz (SprengG; Stoffgruppe C). (German regulatory requirements)

The ingredients of this product are reported in the following inventories:

| TCSI (TW) : | On the inventory, | or | in compliance with the inventory | |
|-------------|-------------------|----|----------------------------------|--|
| | | | | |

TSCA (US) : All substances listed as active on the TSCA inventory

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| | | | | |
| AllC | C (AU) | : | On the inventory, | or in compliance with the inventory |
| DSI | L (CA) | : | All components o | f this product are on the Canadian DSL |
| EN | CS (JP) | : | On the inventory, | or in compliance with the inventory |
| ISH | L (JP) | : | On the inventory, | or in compliance with the inventory |
| KE | CI (KR) | : | On the inventory, | or in compliance with the inventory |
| PIC | CS (PH) | : | On the inventory, | or in compliance with the inventory |
| IEC | SC (CN) | : | On the inventory, | or in compliance with the inventory |
| TEC | CI (TH) | : | On the inventory, | or in compliance with the inventory |
| | | | | |

Canadian lists

No substances are subject to a Significant New Activity Notification.

SECTION 16. OTHER INFORMATION

Further information

This material safety datasheet only contains information relating to safety and does not replace any product information or product specification.

These safety instructions also apply to empty packaging which may still contain product residues. The hazards on the label also apply to residues in the container.

| Sources of key data used to : compile the Material Safety Data Sheet | Internal technical data, data from raw material SDSs, OECD eChem Portal search results and European Chemicals Agen- cy, http://echa.europa.eu/ |
|--|--|
| | |

| Revision Date | : | 08/02/2024 |
|---------------|---|------------|
| Date format | : | mm/dd/yyyy |

Full text of other abbreviations

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with

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|---------|----------------|-------------|---------------------------------|
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x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

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