Safety Data Sheet
acc. to OSHA HCS

Print Date 11/03/2015 Revision Date 11/03/2015

· **Product Identifier**
· **Trade Name: UR3001HP2 Black B**
· **Application of the Substance or Mixture:** Polyols

· **Details of the Supplier of the Safety Data Sheet (SDS)**
· **Manufacturer or Supplier:**
Resinlab, LLC
N109 W13300 Ellsworth Drive,
Germantown, WI 53022
1-800-388-8605
www.resinlab.com
· **Information Department:** Product Safety Department: msds@resinlab.com
· **Emergency Telephone Number:**
North America - Chemtrec: 1-800-424-9300 (24 hours)
International - Chemtrec: 01-703-527-3887 (24 hours)

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2 Hazard(s) identification

· **Hazard Classification**
Repr. 2 H361 Suspected of damaging fertility or the unborn child. Route of exposure: Oral.
Aquatic Acute 3 H402 Harmful to aquatic life.

· **Label Elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Pictogram(s)**

GHS08

· **Signal Word** Warning

· **Hazard-determining Component(s)**
2,2'-Methylenebis(4-methyl-6-tert-butylphenol)
· **Hazard statements**
Suspected of damaging fertility or the unborn child. Route of exposure: Oral.
Harmful to aquatic life.

· **Precautionary statements**
Wear protective gloves/protective clothing/eye protection/face protection.
Avoid release to the environment.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
IF exposed or concerned: Get medical advice/attention.
Store locked up.
Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Hazard Rating System**
· **NFPA System**
· **NFPA Ratings (scale 0 - 4)**

Health = 0
Fire = 1
Reactivity = 0

NFPA special hazards (water reactivity and oxidizing property): None

· **HMIS System**
· **HMIS Ratings (scale 0 - 4)**

Health = *0
Fire = 1
Reactivity = 0

· **Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

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3 Composition/information on ingredients

· **Chemical Characterization: Mixtures**
· **Composition/Information on Ingredients**

CAS: 128-37-0 EINECS: 204-881-4 RTECS: GO 7875000	2,6-di-tert-butyl-p-cresol	Aquatic Acute 1, H400 Acute Tox. 4, H302	1-2.5%

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CAS: 119-47-1 EINECS: 204-327-1	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	Repr. 2, H361 Aquatic Chronic 4, H413	1-2.5%
CAS: 77-58-7 EINECS: 201-039-8 RTECS: WH 7000000	Dibutyltin dilaurate	Muta. 2, H341; Repr. 1B, H360; STOT RE 1, H372 Skin Corr. 1C, H314; Eye Dam. 1, H318 Skin Sens. 1, H317	0-<0.1%

· **Classification System:**
The Classifications were based on the Toxicological and Ecological Data of the substances/mixtures in the Section 11 and 12.
· **Additional Information:**
If the chemical name/CAS number is proprietary and or weight percentage is listed as a range, the specific chemical identity and or percentage of composition has been withheld as a trade secret.

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4 First-aid measures

· **Description of First Aid Measures**
· **General Information**
Ensure medical personnel are aware of exposure and take precautions for their personal protection; see Section 8 for the information of personal protection.

· **After Inhalation**
Remove victim from exposure to fresh air. Keep person at rest. Provide oxygen if person is not breathing.
Supply fresh air; consult doctor in case of complaints.

· **After Skin Contact**
Gently wash contaminated skin with water.
Remove all contaminated clothing and wash before reuse.
Seek medical treatment in case of complaints.

· **After Eye Contact**
Rinse opened eyes under running water for at least 15 minutes.
Remove contact lenses if present and easy to do so; continue rinsing.
Seek medical treatment in case of complaints.

· **After Swallowing**
If victim is unconscious; never give anything by mouth.
If victim is conscious; rinse out mouth and give victim small amounts of water.
Seek medical treatment in case of complaints.

· **After Exposure** Seek medical treatment in case of complaints.

· **Information for Doctor** Have chemical containers, labels and/or (M)SDS ready when calling or visiting a medical center.
· **Indication of any Immediate Medical Attention and Special Treatment Needed**
liver tests
lung tests
Reproductive system function tests
thyroid tests
Check section 11 Toxicological Information for further relevant information.

· **Additional Information**
For additional information, please consult the corresponding first aid measures in the most current version of Emergency Response Guidebook which is produced by the US Department of Transportation.

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5 Fire-fighting measures

· **Extinguishing Media**
· **Suitable Extinguishing Agent(s)**
Use fire fighting measures and extinguishing agents that suit the environment.
In case of fire, suitable extinguishing agents are:
Alcohol resistant foam.
Dry chemical or fire-extinguishing powder.
Carbon dioxide (CO_2).
Water spray or water fog.
· **Unsuitable Extinguishing Agent(s)** No relevant information.

· **Firefighting Procedures**
Isolate fire and deny unnecessary entry.
Eliminate all ignition sources if safe to do so.
Do not extinguish fire unless flow can be stopped.
Fight fire remotely due to the risk of explosion.
Burning liquids may be moved by flushing with water; protect personnel and minimize property damage.
Fight fire from protected location or safe distance.
Contain fire water runoff if possible to prevent environmental pollution.

· **Special Hazards Arising in Fire**
Will not burn unless preheated.
In case of fire, following can be released:
Various hydrocarbons
pyrolysis products or 1,3 butadiene
Carbon dioxide (CO_2) and Carbon monoxide (CO)

· **Advice for Firefighters**
If employees are expected to fight fires, they must be trained and equipped as stated in the OSHA fire brigades standard (29 CFR 1910.156).

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As with any fire, wear positive-pressure self-contained breathing apparatus and full protective gear that are NIOSH approved.

· **Additional Information** Ensure adequate and functional fire fighting facilities equipped in working area at all times.

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6 Accidental release measures

· **Personal Precautions**
Do not breathe gas, vapors, dusts or mists if their inhalable particles occur during use.
Ensure personnel take precautions for their personal protection during clean up; see Section 8 for the specific requirements.

· **Environmental Precautions** No further relevant information.

· **Cleaning Up Methods**
Ensure adequate ventilation.
Eliminate all ignition sources.
Keep unauthorized personnel away.
Absorb residues with liquid-binding materials.
Ventilate and wash area after clean-up is complete.
Collect spills in suitable and properly labeled containers.
Do not use solvents unless following safe handling practices and within the recommended exposure guidelines.
Dispose contaminated chemicals as waste according to Section 13.

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7 Handling and storage

· **Handling**
· **Precautions for Safe Handling**
Keep away from incompatible material(s).
Avoid any release into the environment.
Observe all the personal protection requirements in Section 8.
· **Information about Protection Against Explosions and Fires**
Will not burn unless preheated.
Keep away from heat, sparks, open flame and other ignition sources during handling.
Be prepared with respirators.

· **Storage** Store between 75 and 95 degrees F.
· **Requirements to be Met by Storerooms and Receptacles**
Store in a well-ventilated place; provide ventilation for receptacles.
Keep stored in accordance with local, regional, national, and international regulations.
· **Information about Storage in One Common Storage Facility**
Store away from incompatible material(s).
Store away from foodstuffs.
Avoid release to the environment.

· **Additional Information** No further relevant information.

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8 Exposure controls/personal protection

· **Engineering Measures or Controls**

· **Exposure Limit Values that Require Monitoring at the Workplace**	
128-37-0 2,6-di-tert-butyl-p-cresol	
REL	Long-term value: 10 mg/m³
TLV	Long-term value: 2* mg/m³ *as inhalable fraction and vapor
77-58-7 Dibutyltin dilaurate	
PEL	Long-term value: 0.1 mg/m³ as Sn
REL	Long-term value: 0.1 mg/m³ as Sn, Skin
TLV	Short-term value: 0.2 mg/m³ Long-term value: 0.1 mg/m³ as Sn; Skin

· **Other Engineering Measures or Controls**
Ventilation rates should be matched to conditions.
If applicable, use process enclosure(s), local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits.

· **Personal Protective**
· **General Protective and Hygienic Measures**
Do not eat, drink or smoke during work.
Clean hands and exposed skin thoroughly after work and before breaks.

· **Personal Protective Equipment (PPE)**
· **Breathing Equipment** No breathing equipment required.
· **Hand Protection**
Selection of glove material should take into consideration the penetration times, rates of diffusion, and the degradation.
Suggested glove type(s):
Nitrile Gloves
Butyl Rubber Gloves

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· **Body Protection** Lab coat is required.

· **Additional Information**
All protective clothing (suits, gloves, footwear, headgear) should be clean, available every day, and put on before work.
The Engineering measures or controls, and PPE recommendations are only guidelines and may not apply to every situation. For additional information, please consult the corresponding requirements under OSHA 29 CFR 1910.94-95, and 29 CFR 1910.132-138.

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9 Physical and chemical properties

· **Information on Basic Physical and Chemical Properties**

· **Appearance:**	
· **Form:**	Liquid
· **Color:**	Black
· **Odor:**	Characteristic
· **Odor Threshold:**	Not determined.
· **PH-Value:**	Not determined.
· **Change in Condition:**	
· **Melting Point:**	Not determined.
· **Boiling Point:**	>187 °C (>369 °F)
· **Flash Point:**	>190 °C (>374 °F)
· **Decomposition Temperature:**	Not determined.
· **Flammability:**	Not determined.
· **Explosion:**	Not determined.
· **Explosion Limits:**	
· **Lower:**	Not determined.
· **Upper:**	Not determined.
· **Vapor Pressure:**	Not determined.
· **Vapor Density:**	not determined
· **Density at 20 °C (68 °F):**	0.99 g/cm³ (8.262 lbs/gal)
· **Solubility in or Miscibility with**	
· **Water:**	Not miscible or difficult to mix.
· **Viscosity:**	
· **Dynamic:**	Not determined.
· **Kinematic:**	Not determined.

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10 Stability and reactivity

· **Physical Hazard(s)** Not a regulated reactive or physical hazard under GHS.

· **Hazardous Reactivity and Chemical Stability** Stable under normal conditions of use, storage and temperatures.

· **Thermal Decomposition and Conditions to be Avoided**
Keep away from incompatible material(s).
Thermally decomposes during fire or high heat; keep away from heat, sparks, open flame and other ignition sources.

· **Possibility of Other Hazardous Reaction(s)** In contact with incompatible materials.

· **Incompatible Material(s)**
Oxidizing agents
Acids
Bases (Alkalis)

· **Hazardous Decomposition Product(s)**
Thermally decomposes during fire or very high heat. See Section 5 for fire hazards evolved during thermal decomposition.

· **Hazardous Polymerization Product(s)** No relevant information.

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11 Toxicological information

· **Acute Toxicity**

· **Oral**		
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated		
Oral	LD50	(No data available)
3648-20-2 Diundecyl phthalate (DUP)		
Oral	LD50	> 15800 mg/kg (rat) (No mortality found) The substance was not classified as an acute oral hazard. Reference: ECHA (2011).
128-37-0 2,6-di-tert-butyl-p-cresol		
Oral	LD50	> 2930 mg/kg (rat) (LD0; OECD TG 401) No mortality, and no effects were observed for clinical signs, body weight and gross examination. The substance was therefore not classified as an acute oral hazard. Reference: ECHA (2012) and OECD SIDS (2002).
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)		
Oral	LD50	(rat) (LD0 ≥ 5000 mg/kg; no death occurred) Reference: ECHA (2011).

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· **Potential Health Effect(s):**
abnormal pain
nausea
vomiting
dizziness
See acute inhalative effect(s) for further information

· **Dermal**		
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated		
Dermal	LD50	(No data available)
3648-20-2 Diundecyl phthalate (DUP)		
Dermal	LD50	(rat) (LD0(OECD TG 402) ≥2000 mg/kg: No mortality found) No mortality or any health effects found in males or females; the substance was not classified as an acute dermal hazard. Reference: ECHA (2011).
128-37-0 2,6-di-tert-butyl-p-cresol		
Dermal	LD50	≥ 2000 mg/kg (rat) (LD0; OECD TG 402; occlusive) No mortality, and no effects were observed with regard to clinical signs, body weight and gross examination. The substance was therefore not classified as an acute dermal hazard. Reference: OECD SIDS (2002).
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)		
Dermal	LD50	(rabbit) (LD0 ≥ 10000 mg/kg; no death occurred) No mortality or any clinical signs of toxicities observed at 10000 mg/kg bw. Reference: ECHA (2011).

· **Potential Health Effect(s):**
No further relevant information available; classification is not possible.
See acute inhalative effect(s) for further information.

· **Inhalative**		
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated		
Inhalative	LC50/4 h	(No data available)
3648-20-2 Diundecyl phthalate (DUP)		
Inhalative	LC50/4 h	(rat) (No mortality found at the saturated concentration) LC0/6 hours (150 °C) > 1.8 mg/L No mortality was observed up to the saturated vapor concentration of 1.8 mg/L; the substance was not classified as an acute inhalative hazard. Reference: ECHA (2011).
128-37-0 2,6-di-tert-butyl-p-cresol		
Inhalative	LC50/4 h	(No data available)
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)		
Inhalative	LC50/4 h	(No data available)

· **Potential Health Effect(s):**
While not possible to classify the acute inhalative hazard due to missing data, the product may cause the following symptom(s):
cough
sore throat

· **Skin Corrosion or Irritation**	
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
Corrosion/Irritation	slightly irrit. (Test species: n/a) Although no appropriate human or animal health effects data were known to exist, this substance was expected to be a slight skin irritant. Reference: Sartomer (M)SDS (2005).
3648-20-2 Diundecyl phthalate (DUP)	
Corrosion/Irritation	slightly irrit. (rabbit) (Federal Register 1500.51.1973) Erythema: 1/1 (Max. 1; 1 out of 6 animals at 24 hrs; 4 out of 6 animals at 48 hrs) Edema: 0 (6 out of 6 animals) The substance was determined to be slightly irritating to skin (Category 3). Reference: ECHA (2011).
128-37-0 2,6-di-tert-butyl-p-cresol	
Corrosion/Irritation	slightly (rabbit) (Patch test; Semiocclusive; neat substance) Irritation score: 0.3 - 0.7 (Max. 8; Intact skin; time point: 24+72 hrs). Irritation score: 0 - 0.3 (Max. 8; Abraded skin; time point: 24+72 hrs). The substance was considered as slightly irritating (Category 3) to rabbit skin. Reference: ECHA (2011).
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	
Corrosion/Irritation	not irritating (rabbit) (OECD TG 404) Primary dermal irritation index (24+48+72 hours) = 0/6 (Max. 6; mean score of all treated animals); the substance was not irritating to rabbit skin. Reference: ECHA (2011).

· **Potential Health Effect(s):** *No further relevant information; classification is not possible.*

· **Eye Serious Damage or Irritation**	
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
Damage/Irritation	slightly irrit. (Test species: n/a) Although no appropriate human or animal health effects data were known to exist, this substance was expected to cause slight eye irritation. Reference: Sartomer (M)SDS (2005).

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3648-20-2 Diundecyl phthalate (DUP)		
Damage/Irritation	slightly irrit. (rabbit) (0.1mL pure substance) conjunctivae = 4, 3.3, and 0 (at 1, 24, and 48 hrs respectively; Max. 110; mean scores of all animals) cornea = 0 (1+24+48 hrs; mean score of all animals) iris = 0 (1+24+48 hrs; mean score of all animals) The substance was slightly irritating to rabbit eyes (Category 2B). Reference: ECHA (2011).	
128-37-0 2,6-di-tert-butyl-p-cresol		
Damage/Irritation	slightly (rabbit) Cornea: 0/4 (Max. score: 4; Time point: 24h+48h+72h; mean score of all treated animals) Iris: 0/2 (Max. score: 2; Time point: 24h+48h+72h; mean score of all treated animals) Conjunctivae: 0.5/3 (Max. score: 3; Time point: 24h+48h+72h; mean score of all treated animals) Chemosis: 0.1/4 (Max. score: 4; Time point: 24h+48h+72h; mean score of all treated animals) All the symptoms were fully reversible at the end of the test period. The substance was considered as slightly irritating (Category 2B) to rabbit eyes from the view point of safety. Reference: ECHA (2012).	
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)		
Damage/Irritation	not irritating (rabbit) (OECD TG 405) Cornea and Iris: 0 (mean score of all treated animals; time point: 24+48+72 hours) Conjunctivae: 1/3 (Max. 3; 2 out of 3 animals; time point: 24 hours; fully reversible in 72 hours) Conjunctivae: 0/3 (Max. 3; 1 out of 3 animals; time point: 24+48+72 hours) The substance was not irritating to rabbit eyes based on the classification criteria. Reference: ECHA (2011).	

· **Potential Health Effect(s):** No further relevant information; classification is not possible.

· **Respiratory or Skin Sensitization**

69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated		
Sensitization	Skin	(No data available)
	Respiratory	(No data available)
3648-20-2 Diundecyl phthalate (DUP)		
Sensitization	Skin	not sensitizing (Human) (Repeated insult patch test) No positive reaction was observed in 104 panelists after a repeated administration of 0.2 mL pure substance for 96 hours. Reference: ECHA (2011).
	Respiratory	(No data available)
128-37-0 2,6-di-tert-butyl-p-cresol		
Sensitization	Skin	not sensitizing (Human) Despite of being in wide dispersive use as an ingredient of various products for many years, only very few cases of allergic reaction in humans after dermal exposure or oral intake have been described. Meanwhile, only negative results were observed from dermal sensitizing tests with animals. Thus, the substance was not classified as a dermal sensitizer when considering the weight of all evidence. Reference: GHS-J (2006).
	Respiratory	(No data available)
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)		
Sensitization	Skin	not sensitizing (mouse) (OECD TG 429) Stimulation index (Negative controlled group with 0% of the substance): 1.00 Stimulation index (Treated groups with 2%, 10% and 50% of the substance): 1.17, 1.16 and 1.22 respectively. The substance was not classified as a dermal sensitizer to mice due to insignificant differences between the controlled and treated groups. Reference: ECHA (2011).
	Respiratory	(No data available)

· **Potential Health Effect(s):** No relevant information for respiratory sensitization; classification is not possible.

· **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients is listed.

· **Germ Cell Mutagenicity**

69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
Mutagenicity	(No data available)
3648-20-2 Diundecyl phthalate (DUP)	
Mutagenicity	negative (Human) (In Vitro (mammalian chromosome aberration)) In Vitro (mammalian chromosome aberration test with OECD TG 473 in human lymphocytes) - negative with and without metabolic activation In Vitro (mammalian chromosome aberration test with OECD TG 476 in mouse lymphoma cells) - negative with and without metabolic activation In Vitro (bacterial reverse mutation assay with OECD TG 471 in Salmonella typhimurium) - negative with and without metabolic activation Reference: ECHA (2011).
128-37-0 2,6-di-tert-butyl-p-cresol	

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Mutagenicity	negative (Test species listed below) In Vitro (AME test; Salmonella typhimurium TA97, TA98, TA100, TA102, TA104, TA1535, TA1537, TA1538, TA2638) - negative with and without metabolic activation. In Vitro (Mammalian chromosome aberration; Chinese hamster Ovary cells) - negative with and without metabolic activation. In Vivo (Chromosome aberration assay; male rats; Oral with 750 mg/kg bw/day) - negative; no adverse effects on chromosomes of femur bone marrow cells of treated rats were observed. In Vivo (Micronucleus assay; mouse; intraperitoneal with 75 mg/kg bw) - negative; incidence of micronuclei in polychromatic erythrocytes in test group was not statistically different from that in the control at all time points. Reference: ECHA (2012).
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	
Mutagenicity	negative (Chinese Hamster) In Vitro (mammalian cell gene mutation assay of Chinese hamster lung fibroblasts (V79) with OECD TG 476) - negative with and without metabolic activation In Vitro (mammalian chromosome aberration test of Chinese hamster lung cell line (CHL/IU) with OECD TG 473) - negative with and without metabolic activation (mouse) In Vivo (oral with 5000 mg/kg; time point: at 24+48+72 hours; micronucleus assay of mouse NMRI strains with OECD TG 474) - negative; no significant increase of micronucleated polychromatic erythrocytes was observed. Reference: ECHA (2011).

· **Potential Health Effect(s):** No further relevant information; classification is not possible.

· **Carcinogenicity**	
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
Carcinogenicity	negative (Test species: n/a) The substance was not listed as a Carcinogen by OSHA, ACGIH, NTP or IARC.
3648-20-2 Diundecyl phthalate (DUP)	
Carcinogenicity	negative (Test species: n/a) (not listed as a Carcinogen by NTP, IARC or OSHA)
128-37-0 2,6-di-tert-butyl-p-cresol	
Carcinogenicity	negative (Test species: n/a) Not listed as a carcinogen by ACGIH, NTP, or OSHA; and listed as a Group 3 carcinogen by IARC, which was not classifiable as to its carcinogenicity to humans.
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	
Carcinogenicity	(Test species: n/a) Not listed as a carcinogen according to ACGIH, IARC, NTP, or OSHA.

· **Potential Health Effect(s):** Not a known Carcinogen.

· **Reproductive Toxicity**	
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
Reproductive Toxi.	(No data available)
3648-20-2 Diundecyl phthalate (DUP)	
Reproductive Toxi.	(No data available)
128-37-0 2,6-di-tert-butyl-p-cresol	
Reproductive Toxi.	negative (rat) (2-generation chronic feeding; up to 500 mg/kg bw/d) NOAEL (Reproductive toxicity; Parental animals) = 500 mg/kg bw/day; no adverse effects on fertility were observed. LOAEL (Developmental toxicity) = 500 mg/kg bw/day; reduced body weight of pups at weaning and retarded development were observed at the highest test level. However, the changes were considered to be of negligible toxicological significance; no reproductive/developmental classification can be assigned to the substance. Reference: ECHA (2012).
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	
Reproductive Toxi.	N/A (rat) (OECD TG 421; oral with up to 800 mg/kg bw/day) LOAEL (P Generation; male rats) = 50 mg/kg bw/day with effects including giant cell formation in testes, decreased sperm motility ratios, decreased sperms in epididymis cauda, and increased abnormal sperm ratios. LOAEL (P Generation; female rats) = 200 mg/kg bw/day with effects including decreased body weight gain, lower food consumption, decreased number of corpora lutea, decreased number of implantation scars, and decreased number of pup born. Based on the effects, the substance was classified as a Category 2 reproductive hazard by ECHA. However, the substance was not listed by California 65, or NLM Toxnet. Specific effect: decrease of absolute and relative testis weight; histopathological testis lesions; atrophy and degeneration of testicular tubules; arrest of spermatogenesis in addition to decrease in sperm motility, viability and sperm number; epididepididymis hypospermia; Route of exposure ORAL

· **Potential Health Effect(s):** Suspected of damaging fertility or the unborn child. Route of exposure: Oral.

· **Specific Target Organ Toxicity - Single Exposure**	
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
STOT-Single	(No data available)
3648-20-2 Diundecyl phthalate (DUP)	
STOT-Single	Target: None (rat) (No abnormal health effects found) No significant abnormal health effects were observed after a single administration with 15800 mg/kg (oral), 2000 mg/kg (dermal), or 1.8 mg/L (inhalation) of the substance. It was therefore not expected to pose a target organ hazard upon single or short-term exposure. Reference: ECHA (2011).

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128-37-0 2,6-di-tert-butyl-p-cresol	
STOT-Single	(Human) (human epidemiological reports) Target organ: None. Despite of being in wide dispersive use as an ingredient of various products for many years, two cases of acute intoxication were reported in which two adult women inadvertently ingested the substance (4g and 80g) on an empty stomach. After treatment, the symptoms (e.g. severe epigastric cramping, nausea, vomiting, neurological disorders) complete recovered within a few days. However, the case was considered to be stastically negligible and toxicologically insignificant; no classification can be assigned to the substance. Reference: OECD SIDS (2002).
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	
STOT-Single	(Test species listed below) Target organs: None (rat) - Diarrhea was observed after a single oral administration with 5000 mg/kg bw of the substance. (rabbit) - No mortality or any clinical signs of toxicities were observed after a single dermal application with 10000 mg/kg bw of the substance. However, the dose levels were both outside of the guidance value ranges. Reference: ECHA (2011).

· **Potential Health Effect(s):** No further relevant information; classification is not possible.

· **Specific Target Organ Toxicity - Repeated Exposure**	
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
STOT-Repeated	(No data available)
3648-20-2 Diundecyl phthalate (DUP)	
STOT-Repeated	Target: None (rat) (No systemic effect found after repeated oral doses) At 2.5% (> 2500 mg/bw/day; Diet period: 21 days) daily diet group, the substance caused a moderate proliferation of peroxisomes in livers of the rats. However, the dose level was out of the guidance range values. Reference: ECHA (2011).
128-37-0 2,6-di-tert-butyl-p-cresol	
STOT-Repeated	(Rats and Mice) Target organs: Category 2 (Lung, Liver, and Thyroid gland) via (Oral+Dermal) (rat) (2-generation chronic feeding; up to 500 mg/kg bw/day) NOAEL (F1 males) = 25 mg/kg bw/day; decreased body weight, increased incidence of hepatocellular foci and nodules, consistently increased liver enzymes, and hyperactive thyroid were observed in F1 males starting with dose level of 100 mg/kg bw/day. (mouse) (Dermal; 145-867 (to males), 208-1245 (to females) mg/kg bw/day; four weeks) NOAEL < 200 mg/kg bw/day; congestion and enlargement of lung; histologically, degeneration and necrosis of alveolar epithelial cells were observed. Reference: ECHA (2012) and OECD SIDS (2002).
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	
STOT-Repeated	N/A (rat) -LOAEL(oral; male rats) = 42.3 mg/kg bw/day with effects on livers (increased absolute and relative liver weights) and testicular system (decreased absolute and relative testicle weights, atrophy of testicular tubules, spermatogenic arrest, and epididymis hypospermia). -LOAEL(oral; female rats) = 54.2 mg/kg bw/day with effects on livers (increased absolute and relative liver weights). However, the effects were considered as conclusive but not sufficient for the classification. Reference: ECHA (2011).

· **Aspiration Hazard**	
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
Aspiration Hazard	(No data available)
3648-20-2 Diundecyl phthalate (DUP)	
Aspiration Hazard	(No data available)
128-37-0 2,6-di-tert-butyl-p-cresol	
Aspiration Hazard	(No data available)
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	
Aspiration Hazard	(No data available)

· **Potential Health Effect(s):** No relevant information; classification is not possible.

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12 Ecological information

· **Aquatic Environmental Toxicity**	
69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
Algae Toxicity	(No data available)
Crustacean Toxicity	(No data available)
Fish Toxicity	(No data available)
3648-20-2 Diundecyl phthalate (DUP)	
Algae Toxicity	3.3 mg/l (Pseudokirchneriella subcapitata) (NOEC (8 days; Maximum dose: 3.3 mg/l)) EC50 (72 hrs; OECD TG 201) = 3.3 m/l (Maximum test concentration)
Crustacean Toxicity	0.059 mg/l (Daphnia magna (water flea)) (NOEC (21 days; Maximum dose: 0.059 mg/l)) LC50 (48 hrs; EPA OTS 797.1300) > 0.022 mg/L
Fish Toxicity	0.3 mg/l (Oncorhynchus mykiss (Rainbow trout)) (NOEC(155 days); EPA OPPTS 850.1400; Max.: 0.3mg/l) LC50 (96 hrs; EPA-660/3-75-009) > 1.4 mg/L No death was observed at water solubility of the substance (1.0 mg/L at 25℃), it was therefore not classified as hazardous to aquatic environment. Reference: ECHA (2011).

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128-37-0 2,6-di-tert-butyl-p-cresol	
Algae Toxicity	> 0.4 mg/l (Scenedesmus subspicatus) (EC50 (72 hrs); EU Method C3) EC8 (72h) = 0.4 mg/l
Crustacean Toxicity	0.61 mg/l (Daphnia magna (water flea)) (EC50 (48 hrs); OECD TG 202) 0.316 mg/l (NOEC (21 days); OECD TG 202) Based on the non-rapid degradability and the acute LC50 < 1 mg/l; the substance is classified as a Chronic-1 aquatic hazard.
Fish Toxicity	> 0.57 mg/l (Brachydanio rerio (Zebra fish)) (LC0 (96 hrs); Directive 84/449/EEC C1) Reference: ECHA (2012).
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	
Algae Toxicity (static)	> 5 mg/l (Selenastrum capricornum) (EC50 (72 hr); biomass and growth rate; OECD TG 201)
Crustacean Toxicity (static)	4.8 mg/l (Daphnia magna (water flea)) (EC0 (48 hrs); OECD TG 202; no death occurred) NOEC (21 days; OECD TG 211) = 0.34 mg/L
Fish Toxicity	5 mg/l (Oryzias latipes (Rice fish)) (LC0 (96 hrs); OECD TG 203) No toxic symptoms or death occurred. Based on the poor water solubility (7E-6 g/L at 20℃) and the non-rapid degradability, the substance is classified as a Chronic-4 aquatic environmental hazard for safety reason. Reference: ECHA (2011).

· **Aquatic Environmental Toxicity Assessment:** No further relevant information; classification is not possible.

· **Degradability and Stability**

69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
Biodegradation	(No data available)
Persistence	(Test species: n/a) The substance is not persistent. Reference: Canada DSL (2007).
Photodegradation	(No data available)
Stability in water	(No data available)
3648-20-2 Diundecyl phthalate (DUP)	
Biodegradation	readily biodeg. (Test species: n/a) (Biodegradation (28 days; OECD TG 301B)=69%) The substance is readily biodegradable. Reference: ECHA (2011).
Persistence	(Test species: n/a) (The substance is not persistent) Reference: Canada DSL (2007).
Photodegradation	2.91E-11 cm³/molecule-sec (OH radical) (Calculated by AOPWIN) Half-life (5E5 OH/cm³) = 13.25 hours Reference: ECHA (2011).
Stability in water	stable (Test species: n/a) (Half-life (PH=7; 25 ℃; HYDROWIN) = 7.7 yrs) Half-life (PH=8; 25 ℃;Calculated by HYDROWIN) = 281.03 days Reference: ECHA (2011).
128-37-0 2,6-di-tert-butyl-p-cresol	
Biodegradation	non-biodegrad. (Test species: n/a) (Standard test; Chemical conc. 50 ppm; 4 weeks) Biodegradation (Indirect analysis from BOD) = 4.5% Biodegradation (Direct analysis from GC) = 0.8% The substance is non-biodegradable. Reference: CHRIP (2011).
Persistence	(Test species: n/a) The substance is not persistent. Reference: Canada DSL (2007).
Photodegradation	1.83E-11 cm³/molecule-sec (OH radical) (Estimated from AOPWIN, v1.90) Half-life (1.5E6 OH/cm³) = 7 hours Reference: ECHA (2012).
Stability in water	(Test species: n/a) Half-life (DT50; 20℃) = 4 - 8 days Reference: ECHA (2012).
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	
Biodegradation	(Test species: n/a) (OECD TG 301C; chemical conc. 100 mg/L; 4 weeks) Biodegradation (Direct from HPLC) = 1% Biodegradation (Indirect from BOD) = 0% The substance is non-biodegradable. Reference: CHRIP (2011).
Persistence	(Test species: n/a) The substance is persistent. Reference: Canada DSL (2007).
Photodegradation	4.1E-11 cm³/molecule-sec (OH radical) (Calculated by AOP) Half-life = 9.4 hours Reference: ECHA (2011).
Stability in water	(No data available)

· **Bioaccumulation and Distribution**

69102-90-5 1,3-Butadiene, homopolymer, hydroxy-terminated	
LogPow	(No data available)
BCF	(No data available) The substance is not bioaccumulative. Reference: Canada DSL (2007).
Koc	(No data available)

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3648-20-2 Diundecyl phthalate (DUP)	
LogPow	4.95 (Test species: n/a) (The substance is not bioaccumulative)
BCF	21.4 (Test species: n/a) (Calculated by BCFBAF or EPIWIN) Reference: ECHA (2011) and Canada DSL (2007).
Koc	≥ 2.5E21 L/kg (Test species: n/a) LogKoc (Soil; OECD TG 121) = ca. 21.41 LogKoc (Sewage sludge; OECD TG 121) = ca. 23.21 Reference: ECHA (2011).
128-37-0 2,6-di-tert-butyl-p-cresol	
LogPow	5.1 (Test species: n/a) (Shake-flask method) Reference: CHRIP (2011) and ECHA (2012).
BCF	(Cyprinus carpio) BCF (8 weeks; 500 ppb) = 220 - 2800 BCF (8 weeks; 50 ppb) = 230 - 2500 BCF (8 weeks; 5 ppb) = 330 - 1800 The substance is moderately bioaccumulative.
Koc	(Test species: n/a) (Estimated by QSAR calculation) Koc = 8183 L/kg (log Kow based estimation), Koc = 14750 L/kg (MCI based estimation). Therefore, adsorption potential of the substance is not high. According to a Mackay Level I model calculation, the main target compartment for the substance is air (79-87 %), followed by soil (6.1-10.2 %) and sediment (5.7-9.5 %).
119-47-1 2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	
LogPow	6.25 (Test species: n/a) (OECD TG 107; 20 °C) Reference: ECHA (2011).
BCF	(Cyprinus carpio) BCF (Chemical conc. 2 µg/L; 60 days) = 710 BCF (Chemical conc. 0.2 µg/L; 60 days) = 490 The substance is low bioaccumulative in aquatic environment. Reference: CHRIP (2011).
Koc	150000 L/kg (Test species: n/a) (Calculated from LogPow of 6.25 and LogKoc = 0.81 X LogPow + 0.1) Reference: ECHA (2011).

· **Degradability and Bioaccumulation Assessment:** Non-rapidly degradable, and low bioaccumulative.

· **Additional Information** No further relevant information.

13 Disposal considerations

· **Hazardous Waste List**
· **Description:** It may be necessary to contain and dispose of the substance/mixture as a hazardous waste.
· **Waste Treatment Recommendation:**
Generation of waste should be avoided or minimized wherever possible.
Chemical waste, even small quantities, is neither allowed to be poured down drains, sewage system or waterways; nor disposed with household garbage.
Dispose of contents/containers in accordance with local, regional, national, and international regulations.

· **Unused and Uncontaminated Packagings**
· **Recommendation** Dispose of according to your local waste regulations.

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14 Transport information

· **UN-Number** · **DOT, ADR, ADN, IMDG, IATA**	Not regulated for transport; not applicable. -
· **UN Proper Shipping Name** · **DOT, ADR, IMDG, IATA**	 -
· **Transport hazard class(es)**	Not regulated for transport; not applicable.
· **DOT, ADR, ADN, IMDG, IATA** · **Class**	 -
· **Packing group** · **DOT, ADR, IMDG, IATA**	Not regulated for transport; not applicable. -
· **Environmental Hazards:**	Not applicable.
· **Special Precautions:**	Not applicable.
· **Transport in Bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	-

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15 Regulatory information

· **USA Regulation Lists**

· **SARA (Superfund Amendments and Reauthorization Act of 1986)**

· **Section 302 (Extremely Hazardous Substances)**

None of the ingredients is listed.

· **Section 313 (Toxics Release Inventory (TRI) reporting)**

None of the ingredients is listed.

· **Section 311/312 (Hazardous Chemical Inventory Reporting)**

119-47-1	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)	A	1-2.5%

· **Hazard Abbreviations for SARA 311/312**
A - Acute Health Hazard
C - Chronic Health Hazard
F - Fire Hazard
R - Reactive Hazard
S - Sudden Release of Pressure Hazard

· **TSCA (Toxic Substances Control Act)**

All ingredients are listed.

· **Proposition 65**

· **Chemicals Known to Cause Cancer**

None of the ingredients is listed.

· **Chemicals Known to Cause Reproductive Toxicity for Females**

None of the ingredients is listed.

· **Chemicals Known to Cause Reproductive Toxicity for Males**

None of the ingredients is listed.

· **Chemicals Known to Cause Developmental Toxicity**

None of the ingredients is listed.

· **Carcinogenic Categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **IARC (International Agency for Research on Cancer)**

128-37-0	2,6-di-tert-butyl-p-cresol	3

· **NTP (National Toxicology Program)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value Established by ACGIH)**

128-37-0	2,6-di-tert-butyl-p-cresol	A4
77-58-7	Dibutyltin dilaurate	A4

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **International Regulation Lists**

· **Canadian Domestic Substance Listings:**

All ingredients are listed.

· **Canadian Ingredient Disclosure list (limit 0.1%)**

None of the ingredients is listed.

· **Canadian Ingredient Disclosure list (limit 1%)**

128-37-0	2,6-di-tert-butyl-p-cresol
119-47-1	2,2'-Methylenebis(4-methyl-6-tert-butylphenol)

· **Chinese Chemical Inventory of Existing Chemical Substances:**

All ingredients are listed.

· **Japanese Existing and New Chemical Substance List:**

All ingredients are listed.

· **Korean Existing Chemical Inventory:**

All ingredients are listed.

· **European Pre-registered substances:**

All ingredients are listed.

· **REACh - Substances of Very High Concern (SVHC) List:**

None of the ingredients is listed.

· **Restriction of Hazardous Substances Directive (RoHS) list:**

None of the ingredients is listed.

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16 Other information

This product and technical data related to this product are export controlled by the United States (US) Government. Exportation/international shipments of this product are subject to licensing by the US Government. Export, reexport or other diversion, either in the original form or after being incorporated in an intermediate process into other end-items, is

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STRICTLY PROHIBITED unless expressly authorized by the cognizant agency of the US Government. If you plan to export this material in some form, please contact Total Petrochemicals & Refining USA, Inc. for more information.
Export Control Classification Number (ECCN): 1C111

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department Issuing (M)SDS:** Product Safety Department
· **Contact:** msds@resinlab.com

· **Abbreviations and acronyms:**
ACGIH: American Conference of Governmental Industrial Hygienists
ACToR: US EPA Aggregated Computational Toxicology Resource
ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road
BCF: Bioconcentration Factor
CAS: Chemical Abstracts Service (division of the American Chemical Society)
CCRIS: US NLM TOXNET Chemical Carcinogenesis Research Information System
CHRIP: Japan NITE Information on Biodegradation and Bioconcentration of the Existing Chemical Substances in the Chemical Risk Information Platform
DOT: US Department of Transportation
DSL: Canada Domestic Substance List
ESIS: European Chemical Substances Information System
HMIS: US National Paint & Coatings Association (NPCA) Hazardous Materials Identification System
HSDB: US NLM TOXNET Hazardous Substances Databank
HSNO CCID: New Zealand Hazardous Substances and New Organisms Chemical Classification Information Database
IARC: International Agency for Research on Cancer developed by United Nations World Health Organisation (WHO)
IATA-DGR: Dangerous Goods Regulations (DGR) by the International Air Transport Association (IATA)
ICAO-TI: Technical Instructions (TI) by the International Civil Aviation Organization (ICAO)
ICSC: International Chemical Safety Cards
IMDG: International Maritime Dangerous Goods; the principal international rules for International Carriage of Dangerous Goods by SEA under the Recommendations on the Transport of Dangerous Goods by United Nations (RTDG)
Koc: Partition coefficient, soil Organic Carbon to water
LC50/LD50: Lethal Concentration/Dose, 50 percent
N/a: Not available or Not applicable
NFPA: US National Fire Protection Association
NIOSH: US National Institute of Occupational Safety and Health
NITE: National Institute of Technology and Evaluation, Japan
OECD: Organisation for Economic Co-operation and Development
OSHA: US Occupational Safety and Health Administration
P: Marine Pollutant
RCRA: Resource Conservation and Recovery Act (USA)
REACh: EU Registry, Evaluation and Authorisation of Chemicals
RID: the Regulations Concerning the International Carriage of Dangerous Goods by Rail; published by the Central Office for International Carriage by Rail (OTIF)
RTDG: the Recommendations on the Transport of Dangerous Goods by United Nations (UN)
RTECS: US Registry of Toxic Effects of Chemical Substances
SARA: US Superfund Amendments and Reauthorization Act
SIDS: OECD existing chemicals Screening Information Data Sets
SVHC: EU ECHA Substance of Very High Concern
TEEL: Temporary Emergency Exposure Limit developed by US Subcommittee on Consequence Assessment and Protective Actions (SCAPA) of US Department of Energy (DOE)
TOXLINE: US NLM bibliographic database search system
TSCA: US Toxic Substance Control Act
· **Date of preparation / last revision** 11/03/2015 / 2