# Toro Extended Service Synthetic Grease

**The Toro Company**

Chemwatch Hazard Alert Code: **1**

Chemwatch: **5312-29**
Version No: **3.1.1.1**
Safety Data Sheet according to OSHA HazCom Standard (2012) requirements

Issue Date: **06/07/2018**
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S.GHS.USA.EN

## SECTION 1 IDENTIFICATION

### Product Identifier

| | |
|---|---|
| **Product name** | Toro Extended Service Synthetic Grease |
| **Synonyms** | Not Available |
| **Other means of identification** | Not Available |

### Recommended use of the chemical and restrictions on use

| | |
|---|---|
| **Relevant identified uses** | Use according to manufacturer's directions. |

### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

| | |
|---|---|
| **Registered company name** | **The Toro Company** |
| **Address** | 8111 Lyndale Avenue South, Bloomington MN 55420 United States |
| **Telephone** | +1-952-888-8801 |
| **Fax** | +1-952-887-8258 |
| **Website** | www.toro.com |
| **Email** | HealthAndSafety@toro.com |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **CHEMTEL** |
| **Emergency telephone numbers** | 1-800-255-3924 |
| **Other emergency telephone numbers** | +1-813-248-0585 |

## SECTION 2 HAZARD(S) IDENTIFICATION

### Classification of the substance or mixture

**CHEMWATCH HAZARD RATINGS**

| | Min | Max |
|---|---|---|
| Flammability | 1 | |
| Toxicity | 0 | |
| Body Contact | 0 | |
| Reactivity | 1 | |
| Chronic | 0 | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

**NFPA 704 diamond**


Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

| | |
|---|---|
| **Classification** | Acute Aquatic Hazard Category 3, Chronic Aquatic Hazard Category 3 |

### Label elements

| | |
|---|---|
| **Hazard pictogram(s)** | Not Applicable |
| SIGNAL WORD | NOT APPLICABLE |

### Hazard statement(s)

| | |
|---|---|
| **H412** | Harmful to aquatic life with long lasting effects. |

### Hazard(s) not otherwise specified

Not Applicable

### Precautionary statement(s) Prevention

| | |
|---|---|
| **P273** | Avoid release to the environment. |

Continued...

### Precautionary statement(s) Response

Not Applicable

### Precautionary statement(s) Storage

Not Applicable

### Precautionary statement(s) Disposal

| | |
|---|---|
| **P501** | Dispose of contents/container in accordance with local regulations. |

## SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

### Substances

See section below for composition of Mixtures

### Mixtures

| CAS No | %[weight] | Name |
|---|---|---|
| 68411-46-1 | 1-<5 | octylated diphenylamines |
| 10254-57-6 | 1-<5 | 4,4'-methylene bis(dibutyldithiocarbamate) |
| | 1-<5 | lithium salt of aliphatic acid, proprietary |
| 68457-79-4 | 1-<2.5 | zinc dialkyl dithiophosphate |
| 12001-85-3 | NotSpec. | zinc naphthenate |
| 27253-29-8 | NotSpec. | zinc neodecanoate |
| | NotSpec. | synthetic base oil |

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

## SECTION 4 FIRST-AID MEASURES

### Description of first aid measures

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with eyes:<br>▸ Wash out immediately with water.<br>▸ If irritation continues, seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin or hair contact occurs:<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation.<br>If failure/misuse of high pressure/hydraulic equipment results in injection of grease/oil through the skin seek urgent medical attention. Treat as surgical emergency. |
| **Inhalation** | ▸ If fumes, aerosols or combustion products are inhaled remove from contaminated area.<br>▸ Other measures are usually unnecessary. |
| **Ingestion** | ▸ Immediately give a glass of water.<br>▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

### Most important symptoms and effects, both acute and delayed

See Section 11

### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5 FIRE-FIGHTING MEASURES

### Extinguishing media

- Foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

**Do not** use water jets.

### Special hazards arising from the substrate or mixture

| | |
|---|---|
| **Fire Incompatibility** | ▸ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result |

### Special protective equipment and precautions for fire-fighters

| | |
|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear breathing apparatus plus protective gloves.<br>▸ Prevent, by any means available, spillage from entering drains or water courses.<br>▸ Use water delivered as a fine spray to control fire and cool adjacent area.<br>▸ **DO NOT** approach containers suspected to be hot.<br>▸ Cool fire exposed containers with water spray from a protected location. |

**Continued...**

| | |
|---|---|
| **Fire/Explosion Hazard** | ▸ Combustible.<br>▸ Slight fire hazard when exposed to heat or flame.<br>▸ Heating may cause expansion or decomposition leading to violent rupture of containers.<br>▸ On combustion, may emit toxic fumes of carbon monoxide (CO).<br>▸ May emit acrid smoke.<br>▸ Mists containing combustible materials may be explosive.<br>Combustion products include:<br>carbon dioxide ($CO_2$)<br>other pyrolysis products typical of burning organic material.<br>May emit poisonous fumes. |

## SECTION 6 ACCIDENTAL RELEASE MEASURES

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

| | |
|---|---|
| **Minor Spills** | ▸ Clean up all spills immediately.<br>▸ Avoid contact with skin and eyes.<br>▸ Wear impervious gloves and safety goggles.<br>▸ Trowel up/scrape up.<br>▸ Place spilled material in clean, dry, sealed container.<br>▸ Flush spill area with water.<br>Slippery when spilt. |
| **Major Spills** | Minor hazard.<br>▸ Clear area of personnel.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Control personal contact with the substance, by using protective equipment as required.<br>▸ Prevent spillage from entering drains or water ways.<br>▸ Contain spill with sand, earth or vermiculite.<br>Slippery when spilt. |

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 HANDLING AND STORAGE

### Precautions for safe handling

| | |
|---|---|
| **Safe handling** | ▸ Avoid all personal contact, including inhalation.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ Use in a well-ventilated area.<br>▸ Prevent concentration in hollows and sumps.<br>▸ **DO NOT** enter confined spaces until atmosphere has been checked.<br>▸ **DO NOT** allow material to contact humans, exposed food or food utensils. |
| **Other information** | ▸ Store in original containers.<br>▸ Keep containers securely sealed.<br>▸ No smoking, naked lights or ignition sources.<br>▸ Store in a cool, dry, well-ventilated area.<br>▸ Store away from incompatible materials and foodstuff containers.<br>▸ Protect containers against physical damage and check regularly for leaks. |

### Conditions for safe storage, including any incompatibilities

| | |
|---|---|
| **Suitable container** | ▸ Metal can or drum<br>▸ Packaging as recommended by manufacturer.<br>▸ Check all containers are clearly labelled and free from leaks. |
| **Storage incompatibility** | ▸ Avoid reaction with oxidising agents |

## SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

### Control parameters

**OCCUPATIONAL EXPOSURE LIMITS (OEL)**

**INGREDIENT DATA**

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---|---|---|---|---|---|
| US OSHA Permissible Exposure Levels (PELs) - Table Z1 | octylated diphenylamines | Particulates not otherwise regulated (PNOR): Total dust | 15 mg/m3 | Not Available | Not Available | (f) All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by the Particulates Not Otherwise Regulated (PNOR) limit which is the same as the inert or nuisance dust limit of Table Z-3. |

**EMERGENCY LIMITS**

| Ingredient | Material name | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|---|
| Toro Extended Service Synthetic Grease | Not Available | Not Available | Not Available | Not Available |

**Continued...**

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| octylated diphenylamines | Not Available | Not Available |
| 4,4'-methylene bis(dibutyldithiocarbamate) | Not Available | Not Available |
| zinc dialkyl dithiophosphate | Not Available | Not Available |
| zinc naphthenate | Not Available | Not Available |
| zinc neodecanoate | Not Available | Not Available |

### Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.<br>The basic types of engineering controls are:<br>Process controls which involve changing the way a job activity or process is done to reduce the risk.<br>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. |
| **Personal protection** |  |
| **Eye and face protection** | ▸ Safety glasses with side shields<br>▸ Chemical goggles.<br>▸ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. |
| **Skin protection** | See Hand protection below |
| **Hands/feet protection** | ▸ Wear chemical protective gloves, e.g. PVC.<br>▸ Wear safety footwear or safety gumboots, e.g. Rubber |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ P.V.C. apron.<br>▸ Barrier cream.<br>▸ Skin cleansing cream.<br>▸ Eye wash unit. |

### Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.

| Required Minimum Protection Factor | Half-Face Respirator | Full-Face Respirator | Powered Air Respirator |
|---|---|---|---|
| up to 10 x ES | A-AUS P2 | - | A-PAPR-AUS / Class 1 P2 |
| up to 50 x ES | - | A-AUS / Class 1 P2 | - |
| up to 100 x ES | - | A-2 P2 | A-PAPR-2 P2 ^ |

^ - Full-face
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G = Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB = Methyl bromide, AX = Low boiling point organic compounds(below 65 degC)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Red paste with characteristic odour; does not mix with water. |

| | | | |
|---|---|---|---|
| **Physical state** | Non Slump Paste | **Relative density (Water = 1)** | 0.866 @15C |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Available |
| **pH (as supplied)** | Not Applicable | **Decomposition temperature** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | 460 @40C |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | >204 (COC) | **Taste** | Not Available |

**Continued...**

| | | | |
|---|---|---|---|
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | Not Applicable | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Available | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Available | **Volatile Component (%vol)** | Not Available |
| **Vapour pressure (kPa)** | <0.013 @20C | **Gas group** | Not Available |
| **Solubility in water (g/L)** | Immiscible | **pH as a solution (1%)** | Not Applicable |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |

## SECTION 10 STABILITY AND REACTIVITY

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | ▸ Unstable in the presence of incompatible materials.<br>▸ Product is considered stable.<br>▸ Hazardous polymerisation will not occur. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 TOXICOLOGICAL INFORMATION

### Information on toxicological effects

| | |
|---|---|
| **Inhaled** | The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting. |
| **Ingestion** | The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. |
| **Skin Contact** | The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected. |
| **Eye** | Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn). |
| **Chronic** | Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. |

| | | |
|---|---|---|
| **Toro Extended Service Synthetic Grease** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **octylated diphenylamines** | **TOXICITY** | **IRRITATION** |
| | Oral (rat) LD50: >2000 mg/kg[2] | Eye (rabbit): Non Irritant |
| | | Skin (rabbit): Non Irritant [Bay] |
| **4,4'-methylene bis(dibutyldithiocarbamate)** | **TOXICITY** | **IRRITATION** |
| | dermal (rat) LD50: >2000 mg/kg[2] | Not Available |
| | Oral (rat) LD50: 16000 mg/kg[2] | |
| **zinc dialkyl dithiophosphate** | **TOXICITY** | **IRRITATION** |
| | Not Available | Eye (human):SEVERE [Manufacturer] |
| **zinc naphthenate** | **TOXICITY** | **IRRITATION** |
| | Oral (rat) LD50: 4920 mg/kg[2] | Not Available |
| **zinc neodecanoate** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |

| | |
|---|---|
| ***Legend:*** | *1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2.* Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances* |

| | |
|---|---|
| **OCTYLATED DIPHENYLAMINES** | Heating of substituted diphenylamines may generate vapours which can irritate the eyes and airways. Drying of skin and mucous membranes leading to irritation may occur with prolonged or repeated contact. Overexposure may cause skin and airway irritation with dizziness and flu-like symptoms. All show a slight to very low order of toxicity following oral or topical administration. There is very low potential to cause gene mutations.<br>Potential sensitiser producing contact allergies. |

**Continued...**

| | |
|---|---|
| **4,4'-METHYLENE BIS(DIBUTYLDITHIOCARBAMATE)** | Repeated Dose/ Reproductive/ Developmental Effects: A repeat dose toxicity study with screening reproductive and developmental endpoints (OECD 422) has been conducted with the test substance. The parental NOAEL was 1000 ppm; the NOAEL for F1 offspring was greater than 20000 ppm. Genotoxicity: An salmonella/mammalian-microsome plate incorporation mutagenicity assay has been conducted with carbamodithioic acid, dibutyl-,methylene ester. The results of the bacterial mutagenicity test were negative HPV Challenge Program |
| **ZINC DIALKYL DITHIOPHOSPHATE** | The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>Dithiophosphate alkyl esters is corrosive and toxic to the tissues on skin or oral exposure depending on its concentration. Symptoms included diarrhoea, skin and gastrointestinal irritation, lethargy, reduced food intake, staining about the nose and eye; occasionally, there was drooping of the eyelid, hair standing up, inco-ordination and salivation. Toxicity is reduced following inhalation (due to vapour pressure and high viscosity). It may produce reproductive, developmental and genetic toxicity on experimental animals, but no substantive data is available to establish effect on humans. Reproductive effector in rats. |
| **ZINC NAPHTHENATE** | The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. |
| **ZINC NEODECANOATE** | No significant acute toxicological data identified in literature search.<br>Fatty acid salts of low acute toxicity. Their potential to irritate the skin and eyes is dependent on chain length. |
| **OCTYLATED DIPHENYLAMINES & ZINC NAPHTHENATE** | The following information refers to contact allergens as a group and may not be specific to this product.<br>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. |

| | | | |
|---|---|---|---|
| **Acute Toxicity** | ⊘ | **Carcinogenicity** | ⊘ |
| **Skin Irritation/Corrosion** | ⊘ | **Reproductivity** | ⊘ |
| **Serious Eye Damage/Irritation** | ⊘ | **STOT - Single Exposure** | ⊘ |
| **Respiratory or Skin sensitisation** | ⊘ | **STOT - Repeated Exposure** | ⊘ |
| **Mutagenicity** | ⊘ | **Aspiration Hazard** | ⊘ |

***Legend:*** ✗ *– Data available but does not fill the criteria for classification*
✓ *– Data available to make classification*
⊘ *– Data Not Available to make classification*

## SECTION 12 ECOLOGICAL INFORMATION

### Toxicity

**Toro Extended Service Synthetic Grease**

| ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**octylated diphenylamines**

| ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|---|---|---|---|---|
| LC50 | 96 | Fish | >281mg/L | 2 |
| EC50 | 48 | Crustacea | >0.34mg/L | 2 |
| EC50 | 72 | Algae or other aquatic plants | >0.008mg/L | 2 |
| NOEC | 72 | Algae or other aquatic plants | 0.008mg/L | 2 |

**4,4'-methylene bis(dibutyldithiocarbamate)**

| ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|---|---|---|---|---|
| LC50 | 96 | Fish | >0.06mg/L | 2 |
| EC50 | 48 | Crustacea | >0.052mg/L | 2 |
| EC50 | 72 | Algae or other aquatic plants | >0.0325mg/L | 2 |
| NOEC | 72 | Algae or other aquatic plants | 0.0325mg/L | 2 |

**zinc dialkyl dithiophosphate**

| ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|---|---|---|---|---|
| EC50 | 48 | Crustacea | =11.5mg/L | 1 |
| EC50 | 96 | Algae or other aquatic plants | =1-5mg/L | 1 |
| NOEC | 96 | Algae or other aquatic plants | =1mg/L | 1 |

**zinc naphthenate**

| ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|---|---|---|---|---|
| LC50 | 96 | Fish | 1.53mg/L | 4 |
| EC50 | 48 | Crustacea | 4.6mg/L | 4 |

**zinc neodecanoate**

| ENDPOINT | TEST DURATION (HR) | SPECIES | VALUE | SOURCE |
|---|---|---|---|---|
| LC50 | 96 | Fish | 0.439mg/L | 2 |
| EC50 | 48 | Crustacea | 0.105mg/L | 2 |
| NOEC | 72 | Algae or other aquatic plants | 0.0049mg/L | 2 |

***Legend:*** *Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*

**Continued...**

Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| octylated diphenylamines | HIGH | HIGH |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| octylated diphenylamines | LOW (BCF = 5.5) |
| zinc dialkyl dithiophosphate | LOW (BCF = 100) |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| octylated diphenylamines | LOW (KOC = 28640000) |

## SECTION 13 DISPOSAL CONSIDERATIONS

### Waste treatment methods

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Recycle wherever possible or consult manufacturer for recycling options.<br>▸ Consult State Land Waste Authority for disposal.<br>▸ Bury or incinerate residue at an approved site.<br>▸ Recycle containers if possible, or dispose of in an authorised landfill. |

## SECTION 14 TRANSPORT INFORMATION

### Labels Required

| | |
|---|---|
| **Marine Pollutant** | NO |

### Land transport (DOT): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

### Transport in bulk according to Annex II of MARPOL and the IBC code

Not Applicable

## SECTION 15 REGULATORY INFORMATION

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

**OCTYLATED DIPHENYLAMINES(68411-46-1) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

| | |
|---|---|
| US - California OEHHA/ARB - Chronic Reference Exposure Levels and Target Organs (CRELs) | US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants |
| US - California Permissible Exposure Limits for Chemical Contaminants | US - Washington Permissible exposure limits of air contaminants |
| US - Hawaii Air Contaminant Limits | US - Wyoming Toxic and Hazardous Substances Table Z1 Limits for Air Contaminants |
| US - Michigan Exposure Limits for Air Contaminants | US OSHA Permissible Exposure Levels (PELs) - Table Z1 |
| US - Oregon Permissible Exposure Limits (Z-1) | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US - Tennessee Occupational Exposure Limits - Limits For Air Contaminants | US TSCA Chemical Substance Inventory - Interim List of Active Substances |

**4,4'-METHYLENE BIS(DIBUTYLDITHIOCARBAMATE)(10254-57-6) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

| | |
|---|---|
| US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory | US TSCA Chemical Substance Inventory - Interim List of Active Substances |

**ZINC DIALKYL DITHIOPHOSPHATE(68457-79-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

| | |
|---|---|
| US - Vermont Permissible Exposure Limits Table Z-1-A Transitional Limits for Air Contaminants | US EPCRA Section 313 Chemical List |
| US CWA (Clean Water Act) - Priority Pollutants | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US CWA (Clean Water Act) - Toxic Pollutants | US TSCA Chemical Substance Inventory - Interim List of Active Substances |
| US EPA Carcinogens Listing | |

**ZINC NAPHTHENATE(12001-85-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

| | |
|---|---|
| US CWA (Clean Water Act) - Priority Pollutants | US EPCRA Section 313 Chemical List |
| US CWA (Clean Water Act) - Toxic Pollutants | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US EPA Carcinogens Listing | US TSCA Chemical Substance Inventory - Interim List of Active Substances |

**ZINC NEODECANOATE(27253-29-8) IS FOUND ON THE FOLLOWING REGULATORY LISTS**

| | |
|---|---|
| US CWA (Clean Water Act) - Priority Pollutants | US EPCRA Section 313 Chemical List |
| US CWA (Clean Water Act) - Toxic Pollutants | US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory |
| US EPA Carcinogens Listing | US TSCA Chemical Substance Inventory - Interim List of Active Substances |

**Continued...**

### Federal Regulations

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**SECTION 311/312 HAZARD CATEGORIES**

| | |
|---|---|
| Flammable (Gases, Aerosols, Liquids, or Solids) | No |
| Gas under pressure | No |
| Explosive | No |
| Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| Pyrophoric Gas | No |
| Corrosive to metal | No |
| Oxidizer (Liquid, Solid or Gas) | No |
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | No |
| Acute toxicity (any route of exposure) | No |
| Reproductive toxicity | No |
| Skin Corrosion or Irritation | No |
| Respiratory or Skin Sensitization | No |
| Serious eye damage or eye irritation | No |
| Specific target organ toxicity (single or repeated exposure) | No |
| Aspiration Hazard | No |
| Germ cell mutagenicity | No |
| Simple Asphyxiant | No |

**US. EPA CERCLA HAZARDOUS SUBSTANCES AND REPORTABLE QUANTITIES (40 CFR 302.4)**

None Reported

### State Regulations

**US. CALIFORNIA PROPOSITION 65**

None Reported

### National Inventory Status

| National Inventory | Status |
|---|---|
| Australia - AICS | Y |
| Canada - DSL | Y |
| Canada - NDSL | N (zinc naphthenate; octylated diphenylamines; zinc neodecanoate; zinc dialkyl dithiophosphate; 4,4'-methylene bis(dibutyldithiocarbamate)) |
| China - IECSC | Y |
| Europe - EINEC / ELINCS / NLP | Y |
| Japan - ENCS | Y |
| Korea - KECI | Y |
| New Zealand - NZIoC | Y |
| Philippines - PICCS | Y |
| USA - TSCA | Y |
| ***Legend:*** | *Y = All ingredients are on the inventory*<br>*N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)* |

## SECTION 16 OTHER INFORMATION

| | |
|---|---|
| **Revision Date** | 06/07/2018 |
| **Initial Date** | 21/06/2018 |

### Other information

### Ingredients with multiple cas numbers

| Name | CAS No |
|---|---|
| octylated diphenylamines | 68411-46-1, 37338-62-8, 101-67-7 |
| zinc dialkyl dithiophosphate | 68649-42-3, 68457-79-4, 1910-06-1, 26566-95-0, 7491-65-8, 4563-55-7, 68442-22-8 |

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

**Continued...**

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

## Definitions and abbreviations

PC—TWA: Permissible Concentration-Time Weighted Average
PC—STEL: Permissible Concentration-Short Term Exposure Limit
IARC: International Agency for Research on Cancer
ACGIH: American Conference of Governmental Industrial Hygienists
STEL: Short Term Exposure Limit
TEEL: Temporary Emergency Exposure Limit。
IDLH: Immediately Dangerous to Life or Health Concentrations
OSF: Odour Safety Factor
NOAEL :No Observed Adverse Effect Level
LOAEL: Lowest Observed Adverse Effect Level
TLV: Threshold Limit Value
LOD: Limit Of Detection
OTV: Odour Threshold Value
BCF: BioConcentration Factors
BEI: Biological Exposure Index