# Compound 53 Part A - Resin

## KonNx Incorporated

Chemwatch Hazard Alert Code: **3**

Chemwatch: **5633-30**
Version No: **6.1**
Safety Data Sheet according to OSHA HazCom Standard (2024) requirements

Issue Date: **13/03/2025**
Print Date: **13/03/2025**
L.GHS.USA.EN.E

## SECTION 1 Identification

### Product Identifier

| | |
|---|---|
| **Product name** | Compound 53 Part A - Resin |
| **Chemical Name** | Not Applicable |
| **Synonyms** | Not Available |
| **Proper shipping name** | Environmentally hazardous substance, liquid, n.o.s. (contains butylated triphenyl phosphate) |
| **Chemical formula** | Not Applicable |
| **Other means of identification** | Not Available |

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

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|---|---|
| **Relevant identified uses** | Electro Insulating Resin.<br>Use according to manufacturer's directions. |

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

| | |
|---|---|
| **Registered company name** | **KonNx Incorporated** |
| **Address** | 861 E. 73rd Ave Denver Colorado 80229 United States |
| **Telephone** | +1 720-297-6900 |
| **Fax** | Not Available |
| **Website** | https://konnx.us |
| **Email** | konnx@konnx.us |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **CHEMWATCH EMERGENCY RESPONSE (24/7)** |
| **Emergency telephone number(s)** | +1 855-237-5573 |
| **Other emergency telephone number(s)** | +61 3 9573 3188 |

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**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** | Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 2A, Germ Cell Mutagenicity Category 2, Reproductive Toxicity Category 1B, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 2 |

### Label elements

| | |
|---|---|
| **Hazard pictogram(s)** |  |

**Page 1 continued...**

| | |
|---|---|
| **Signal word** | **Danger** |

**Hazard statement(s)**

| | |
|---|---|
| **H317** | May cause an allergic skin reaction. |
| **H319** | Causes serious eye irritation. |
| **H341** | Suspected of causing genetic defects. |
| **H360** | May damage fertility or the unborn child. |
| **H373** | May cause damage to organs through prolonged or repeated exposure. |
| **H411** | Toxic to aquatic life with long lasting effects. |

**Hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

| | |
|---|---|
| **P201** | Obtain special instructions before use. |
| **P260** | Do not breathe mist/vapours/spray. |
| **P280** | Wear protective gloves, protective clothing, eye protection and face protection. |
| **P261** | Avoid breathing mist/vapours/spray. |
| **P273** | Avoid release to the environment. |
| **P202** | Do not handle until all safety precautions have been read and understood. |
| **P264** | Wash all exposed external body areas thoroughly after handling. |
| **P272** | Contaminated work clothing must not be allowed out of the workplace. |

**Precautionary statement(s) Response**

| | |
|---|---|
| **P308+P313** | IF exposed or concerned: Get medical advice/ attention. |
| **P302+P352** | IF ON SKIN: Wash with plenty of water and soap. |
| **P305+P351+P338** | IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. |
| **P314** | Get medical advice/attention if you feel unwell. |
| **P333+P313** | If skin irritation or rash occurs: Get medical advice/attention. |
| **P337+P313** | If eye irritation persists: Get medical advice/attention. |
| **P362+P364** | Take off contaminated clothing and wash it before reuse. |
| **P391** | Collect spillage. |

**Precautionary statement(s) Storage**

| | |
|---|---|
| **P405** | Store locked up. |

**Precautionary statement(s) Disposal**

| | |
|---|---|
| **P501** | Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation. |

## SECTION 3 Composition / information on ingredients

**Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No | %[weight] | Name |
|---|---|---|
| 25791-96-2 | 20 | polypropylene glycol glyceryl ether |
| 68937-40-6 | 8 | butylated triphenyl phosphate |
| 69102-90-5 | 15 | butadiene homopolymer, hydroxyl functionalised |
| 21645-51-2 | 53 | aluminium hydroxide |
| 14808-60-7 | 2.5 | silica crystalline - quartz |
| 77-58-7 | 0.5 | dibutyltin dilaurate |
| 1309-37-1 | 1 | red iron oxide |

## SECTION 4 First-aid measures

**Description of first aid measures**

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|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If product comes in contact with skin:<br>▸ Contact a Poisons Information Centre or a doctor.<br>▸ **DO NOT** allow clothing wet with product to remain in contact with skin, strip all contaminated clothing including boots.<br>▸ Quickly wash affected areas vigorously with soap and water.<br>▸ **DO NOT** give anything by mouth to a patient showing signs of narcosis, i.e. losing consciousness.<br>▸ Give atropine if instructed. |

**Continued...**

| | |
|---|---|
| | ▸ **DO NOT** delay, get to a doctor or hospital quickly. |
| **Inhalation** | ▸ If spray mist, vapour are inhaled, remove from contaminated area.<br>▸ Contact a Poisons Information Centre or a doctor at once.<br>▸ Lay patient down in a clean area and strip any clothing wet with spray.<br>▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.<br>▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.<br>▸ **DO NOT** give anything by mouth to a patient showing signs of narcosis, i.e. losing consciousness.<br>▸ Give atropine if instructed.<br>▸ Get to doctor or hospital quickly. |
| **Ingestion** | If swallowed:<br>▸ Contact a Poisons Information Centre or a doctor at once.<br>▸ If swallowed, activated charcoal may be advised.<br>▸ Give atropine if instructed.<br>▸ **REFER FOR MEDICAL ATTENTION WITHOUT DELAY.**<br>▸ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.<br>▸ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided.<br>▸ Further action will be the responsibility of the medical specialist.<br>▸ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. |

**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.

**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**

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|---|---|
| **Fire Fighting** | ▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear full body protective clothing with breathing apparatus.<br>▸ Prevent, by any means available, spillage from entering drains or water course.<br>▸ Use water delivered as a fine spray to control fire and cool adjacent area.<br>▸ Avoid spraying water onto liquid pools.<br>▸ **DO NOT** approach containers suspected to be hot.<br>▸ Cool fire exposed containers with water spray from a protected location.<br>▸ If safe to do so, remove containers from path of fire. |
| **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>phosphorus oxides (POx)<br>silicon dioxide ($SiO_2$)<br>metal oxides<br>other pyrolysis products typical of burning organic material. |

## 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** | Environmental hazard - contain spillage.<br>▸ Clean up all spills immediately.<br>▸ Avoid breathing vapours and contact with skin and eyes.<br>▸ Control personal contact with the substance, by using protective equipment.<br>▸ Contain and absorb spill with sand, earth, inert material or vermiculite.<br>▸ Wipe up.<br>▸ Place in a suitable, labelled container for waste disposal. |
| **Major Spills** | ▸ Clear area of personnel and move upwind.<br>▸ Alert Fire Brigade and tell them location and nature of hazard.<br>▸ Wear full body protective clothing with breathing apparatus.<br>▸ Prevent, by all means available, spillage from entering drains or water courses.<br>▸ Consider evacuation (or protect in place).<br>▸ No smoking, naked lights or ignition sources. |

**Continued...**

- Increase ventilation.
- Stop leak if safe to do so.
- Water spray or fog may be used to disperse / absorb vapour.
- Contain or absorb spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
- If contamination of drains or waterways occurs, advise emergency services.

Environmental hazard - contain spillage.
Chemical Class: organophosphates
For release onto land: recommended sorbents listed in order of priority.

| SORBENT TYPE | RANK | APPLICATION | COLLECTION | LIMITATIONS |
|---|---|---|---|---|
| LAND SPILL - SMALL | | | | |
| cross-linked polymer - particulate | 1 | shovel | shovel | R, W, SS |
| cross-linked polymer - pillow | 1 | throw | pitchfork | R, DGC, RT |
| wood fiber - pillow | 1 | throw | pitchfork | R,P, DGC, RT |
| foamed glass - pillow | 2 | shovel | shovel | R, W, P, DGC |
| sorbent clay - particulate | 2 | shovel | shovel | R, I, P |
| wood fibre - particulate | 3 | shovel | shovel | R,W, P, DGC |
| LAND SPILL - MEDIUM | | | | |
| cross-linked polymer -particulate | 1 | blower | skiploader | R, W, SS |
| sorbent clay - particulate | 2 | blower | skiploader | R, I, P |
| polypropylene - particulate | 2 | blower | skiploader | R, SS, DGC |
| expanded mineral - particulate | 3 | blower | skiploader | R,I, W, P, DGC |
| wood fiber- particulate | 3 | blower | skiploader | R, W, P, DGC |
| polypropylene - mat | 3 | throw | skiploader | DGC, RT |

Legend
DGC: Not effective where ground cover is dense
R; Not reusable
I: Not incinerable
P: Effectiveness reduced when rainy
RT:Not effective where terrain is rugged
SS: Not for use within environmentally sensitive sites
W: Effectiveness reduced when windy
Reference: Sorbents for Liquid Hazardous Substance Cleanup and Control;
R.W Melvold et al: Pollution Technology Review No. 150: Noyes Data Corporation 1988

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

## SECTION 7 Handling and storage

### Precautions for safe handling

**Safe handling**

- **DO NOT** allow clothing wet with material to stay in contact with skin
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- **DO NOT** enter confined spaces until atmosphere has been checked.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.
- When handling, **DO NOT** eat, drink or smoke.
- Keep containers securely sealed when not in use.
- Avoid physical damage to containers.
- Always wash hands with soap and water after handling.
- Work clothes should be laundered separately.
- Use good occupational work practice.
- Observe manufacturer's storage and handling recommendations contained within this SDS.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

**Other information**

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this SDS.

### Conditions for safe storage, including any incompatibilities

**Suitable container**

- Glass container is suitable for laboratory quantities
- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

**Storage incompatibility**

- Avoid strong acids, bases.
- Avoid reaction with oxidising agents

## SECTION 8 Exposure controls / personal protection

### Control parameters

**Occupational Exposure Limits (OEL)**

**Continued...**

**INGREDIENT DATA**

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---|---|---|---|---|---|
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | aluminium hydroxide | Particulates Not Otherwise Regulated (PNOR)- Respirable fraction | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | aluminium hydroxide | Particulates Not Otherwise Regulated (PNOR)- Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | aluminium hydroxide | Inert or Nuisance Dust: Total Dust | 15 mg/m3 / 50 mppcf | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | aluminium hydroxide | Inert or Nuisance Dust: Respirable fraction | 5 mg/m3 / 15 mppcf | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | aluminium hydroxide | Particulates not otherwise regulated | Not Available | Not Available | Not Available | See Appendix D |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | silica crystalline - quartz | Quartz - respirable | 0.05 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | silica crystalline - quartz | Silica: Crystalline: Quartz (Respirable) | 10 (%SiO2+2) mg/m3 / 250 (%SiO2+5) mppcf | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | silica crystalline - quartz | Silica, crystalline (as respirable dust) | 0.05 mg/m3 | Not Available | Not Available | Ca; See Appendix A |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | dibutyltin dilaurate | Tin, organic compounds (as Sn) | 0.1 mg/m3 | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | dibutyltin dilaurate | Tin (organic compounds, as Sn) | 0.1 mg/m3 | Not Available | Not Available | [skin] [*Note: The REL applies to all organic tin compounds except Cyhexatin.] |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | red iron oxide | Iron oxide- (fume) | 10 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | red iron oxide | Rouge- Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | red iron oxide | Rouge- Respirable fraction | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | red iron oxide | Inert or Nuisance Dust: Total Dust | 15 mg/m3 / 50 mppcf | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | red iron oxide | Inert or Nuisance Dust: Respirable fraction | 5 mg/m3 / 15 mppcf | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | red iron oxide | Iron oxide dust and fume (as Fe) | 5 mg/m3 | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | red iron oxide | Rouge | Not Available | Not Available | Not Available | See Appendix D |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| polypropylene glycol glyceryl ether | Not Available | Not Available |
| butylated triphenyl phosphate | Not Available | Not Available |
| butadiene homopolymer, hydroxyl functionalised | Not Available | Not Available |
| aluminium hydroxide | Not Available | Not Available |
| silica crystalline - quartz | 25 mg/m3 / 50 mg/m3 | Not Available |
| dibutyltin dilaurate | 25 mg/m3 | Not Available |
| red iron oxide | 2,500 mg/m3 | Not Available |

**MATERIAL DATA**

**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.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.
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.
Employers may need to use multiple types of controls to prevent employee overexposure.

- Employees exposed to confirmed human carcinogens should be authorized to do so by the employer, and work in a regulated area.
- Work should be undertaken in an isolated system such as a "glove-box" . Employees should wash their hands and arms upon completion of the assigned task and before engaging in other activities not associated with the isolated system.
- Within regulated areas, the carcinogen should be stored in sealed containers, or enclosed in a closed system, including piping systems, with any sample ports or openings closed while the carcinogens are contained within.

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| | ▸ Open-vessel systems are prohibited.<br>▸ Each operation should be provided with continuous local exhaust ventilation so that air movement is always from ordinary work areas to the operation.<br>▸ Exhaust air should not be discharged to regulated areas, non-regulated areas or the external environment unless decontaminated. Clean make-up air should be introduced in sufficient volume to maintain correct operation of the local exhaust system.<br>▸ For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood. Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.<br>▸ Except for outdoor systems, regulated areas should be maintained under negative pressure (with respect to non-regulated areas).<br>▸ Local exhaust ventilation requires make-up air be supplied in equal volumes to replaced air.<br>▸ Laboratory hoods must be designed and maintained so as to draw air inward at an average linear face velocity of 0.76 m/sec with a minimum of 0.64 m/sec. Design and construction of the fume hood requires that insertion of any portion of the employees body, other than hands and arms, be disallowed. |
| **Individual protection measures, such as personal protective equipment** |  |
| **Eye and face protection** | When handling very small quantities of the material eye protection may not be required.<br>For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs:<br>▸ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]<br>▸ Face shield. Full face shield may be required for supplementary but never for primary protection of eyes.<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. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59]. |
| **Skin protection** | See Hand protection below |
| **Hands/feet protection** | **NOTE:**<br>▸ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.<br>▸ Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.<br>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.<br>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.<br>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.<br>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:<br>· frequency and duration of contact,<br>· chemical resistance of glove material,<br>· glove thickness and<br>· dexterity<br>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).<br>· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.<br>· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.<br>· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.<br>· Contaminated gloves should be replaced.<br>As defined in ASTM F-739-96 in any application, gloves are rated as:<br>· Excellent when breakthrough time > 480 min<br>· Good when breakthrough time > 20 min<br>· Fair when breakthrough time < 20 min<br>· Poor when glove material degrades<br>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.<br>It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.<br>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.<br>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:<br>· Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.<br>· Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential<br>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.<br>▸ Rubber gloves (nitrile or low-protein, powder-free latex, latex/ nitrile). Employees allergic to latex gloves should use nitrile gloves in preference.<br>▸ Double gloving should be considered.<br>▸ PVC gloves.<br>▸ Change gloves frequently and when contaminated, punctured or torn.<br>▸ Wash hands immediately after removing gloves.<br>▸ Protective shoe covers. [AS/NZS 2210]<br>▸ Head covering. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Employees working with confirmed human carcinogens should be provided with, and be required to wear, clean, full body protective clothing (smocks, coveralls, or long-sleeved shirt and pants), shoe covers and gloves prior to entering the regulated area. [AS/NZS ISO 6529:2006 or national equivalent]<br>▸ Employees engaged in handling operations involving carcinogens should be provided with, and required to wear and use half-face filter-type respirators with filters for dusts, mists and fumes, or air purifying canisters or cartridges. A respirator affording higher levels of protection may be substituted. [AS/NZS 1715 or national equivalent]<br>▸ Emergency deluge showers and eyewash fountains, supplied with potable water, should be located near, within sight of, and on the same level with locations where direct exposure is likely. |

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- Prior to each exit from an area containing confirmed human carcinogens, employees should be required to remove and leave protective clothing and equipment at the point of exit and at the last exit of the day, to place used clothing and equipment in impervious containers at the point of exit for purposes of decontamination or disposal. The contents of such impervious containers must be identified with suitable labels. For maintenance and decontamination activities, authorized employees entering the area should be provided with and required to wear clean, impervious garments, including gloves, boots and continuous-air supplied hood.
- Prior to removing protective garments the employee should undergo decontamination and be required to shower upon removal of the garments and hood.
- For quantities up to 500 grams a laboratory coat may be suitable.
- For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs.
- For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers.
- For manufacturing operations, air-supplied full body suits may be required for the provision of advanced respiratory protection.
- Eye wash unit.
- Ensure there is ready access to an emergency shower.
- For Emergencies: Vinyl suit

**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

If inhalation risk above the TLV exists, wear approved dust respirator.
Use respirators with protection factors appropriate for the exposure level.
- Up to 5 X TLV, use valveless mask type; up to 10 X TLV, use 1/2 mask dust respirator
- Up to 50 X TLV, use full face dust respirator or demand type C air supplied respirator
- Up to 500 X TLV, use powered air-purifying dust respirator or a Type C pressure demand supplied-air respirator
- Over 500 X TLV wear full-face self-contained breathing apparatus with positive pressure mode or a combination respirator with a Type C positive pressure supplied-air full-face respirator and an auxiliary self-contained breathing apparatus operated in pressure demand or other positive pressure mode

## SECTION 9 Physical and chemical properties

**Information on basic physical and chemical properties**

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|---|---|
| **Appearance** | Odourless red oxide coloured liquid. |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | 1.40-1.45 |
| **Odour** | No Odour | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Available |
| **pH (as supplied)** | Not Applicable | **Decomposition temperature (°C)** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | 6000-6500 |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Applicable |
| **Flash point (°C)** | >200 | **Taste** | Not Available |
| **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)** | Not Available | **Gas group** | Not Available |
| **Solubility in water** | Immiscible | **pH as a solution (1%)** | Not Applicable |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |
| **Heat of Combustion (kJ/g)** | Not Available | **Ignition Distance (cm)** | Not Available |
| **Flame Height (cm)** | Not Available | **Flame Duration (s)** | Not Available |
| **Enclosed Space Ignition Time Equivalent (s/m3)** | Not Available | **Enclosed Space Ignition Deflagration Density (g/m3)** | Not Available |
| **Nanoform Solubility** | Not Available | **Nanoform Particle Characteristics** | Not Available |
| **Particle Size** | Not Available | | |

## SECTION 10 Stability and reactivity

**Continued...**

| | |
|---|---|
| **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**

| | |
|---|---|
| **a) Acute Toxicity** | Based on available data, the classification criteria are not met. |
| **b) Skin Irritation/Corrosion** | Based on available data, the classification criteria are not met. |
| **c) Serious Eye Damage/Irritation** | There is sufficient evidence to classify this material as eye damaging or irritating |
| **d) Respiratory or Skin sensitisation** | There is sufficient evidence to classify this material as sensitising to skin or the respiratory system |
| **e) Mutagenicity** | There is sufficient evidence to classify this material as mutagenic |
| **f) Carcinogenicity** | Based on available data, the classification criteria are not met. |
| **g) Reproductivity** | There is sufficient evidence to classify this material as toxic to reproductivity |
| **h) STOT - Single Exposure** | Based on available data, the classification criteria are not met. |
| **i) STOT - Repeated Exposure** | There is sufficient evidence to classify this material as toxic to specific organs through repeated exposure |
| **j) Aspiration Hazard** | Based on available data, the classification criteria are not met. |

| | |
|---|---|
| **Inhaled** | The material is not thought to produce respiratory irritation (as classified by EC Directives using animal models). Nevertheless inhalation of vapours, fumes or aerosols, especially for prolonged periods, may produce respiratory discomfort and occasionally, distress.<br>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual. |
| **Ingestion** | Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual. |
| **Skin Contact** | The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives .<br>Repeated exposure may cause skin cracking, flaking or drying following normal handling and use.<br>Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.<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, puncture wounds 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** | Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals.<br>Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur. |
| **Chronic** | Repeated or long-term occupational exposure is likely to produce cumulative health effects involving organs or biochemical systems.<br>Strong evidence exists that the substance may cause irreversible but non-lethal mutagenic effects following a single exposure.<br>Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.<br>Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological, irritant or other mechanism. Once the airways have become hyper-responsive, further exposure to the substance, sometimes even to tiny quantities, may cause respiratory symptoms. These symptoms can range in severity from a runny nose to asthma. Not all workers who are exposed to a sensitiser will become hyper-responsive and it is impossible to identify in advance who are likely to become hyper-responsive.<br>Substances than can cuase occupational asthma should be distinguished from substances which may trigger the symptoms of asthma in people with pre-existing air-way hyper-responsiveness. The latter substances are not classified as asthmagens or respiratory sensitisers<br>Wherever it is reasonably practicable, exposure to substances that can cuase occupational asthma should be prevented. Where this is not possible the primary aim is to apply adequate standards of control to prevent workers from becoming hyper-responsive.<br>Activities giving rise to short-term peak concentrations should receive particular attention when risk management is being considered. Health surveillance is appropriate for all employees exposed or liable to be exposed to a substance which may cause occupational asthma and there should be appropriate consultation with an occupational health professional over the degree of risk and level of surveillance.<br>On the basis of epidemiological data, the material is regarded as carcinogenic to humans. There is sufficient data to establish a causal association between human exposure to the material and the development of cancer.<br><br>Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.<br>Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions. Such damage may become apparent following direct application in subchronic (90 day) toxicity studies or following sub-acute (28 day) or chronic (two-year) toxicity tests.<br><br>There is sufficient evidence to provide a strong presumption that human exposure to the material may result in impaired fertility on the basis of: - clear evidence in animal studies of impaired fertility in the absence of toxic effects, or evidence of impaired fertility occurring at around the same dose levels as other toxic effects but which is not a secondary non-specific consequence of other toxic effects.<br>There is sufficient evidence to provide a strong presumption that human exposure to the material may result in developmental toxicity, generally on the basis of:<br>- clear results in appropriate animal studies where effects have been observed in the absence of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not secondary non-specific consequences of the other toxic effects.<br>Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.<br><br>Exposure to the material may cause concerns for humans owing to possible developmental toxic effects, generally on the basis that results in appropriate animal studies provide strong suspicion of developmental toxicity in the absence of signs of marked maternal toxicity, or at around the same dose levels as other toxic effects but which are not a secondary non-specific consequence of other toxic effects. |

**Continued...**

| | | |
|---|---|---|
| **Compound 53 Part A - Resin** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **polypropylene glycol glyceryl ether** | **TOXICITY** | **IRRITATION** |
| | dermal (rat) LD50: >2000 mg/kg[1] | Eye: no adverse effect observed (not irritating)[1] |
| | Inhalation (Rat) LC50: >50 mg/L4h[2] | Skin (Rodent - rabbit): 500mg - Mild |
| | Oral (Rat) LD50: >2000 mg/kg[1] | Skin (Rodent - rabbit): 500mg - Mild |
| | | Skin (Rodent - rabbit): 500mg - Mild |
| | | Skin: no adverse effect observed (not irritating)[1] |
| **butylated triphenyl phosphate** | **TOXICITY** | **IRRITATION** |
| | dermal (rat) LD50: >2000 mg/kg[2] | Eye (Rodent - rabbit): 0.1mL - Mild |
| | Inhalation (Rat) LC50: >6.35 mg/L4h[2] | Eye (Rodent - rabbit): 0.1mL/30S - Mild |
| | Oral (Rat) LD50: 4700 mg/kg[1] | Skin (Rodent - rabbit): 0.5mL - Mild |
| | | Skin (Rodent - rabbit): 500mg - Mild |
| **butadiene homopolymer, hydroxyl functionalised** | **TOXICITY** | **IRRITATION** |
| | Not Available | Not Available |
| **aluminium hydroxide** | **TOXICITY** | **IRRITATION** |
| | Inhalation (Rat) LC50: >2.3 mg/l4h[1] | Eye: no adverse effect observed (not irritating)[1] |
| | Oral (Rat) LD50: >2000 mg/kg[1] | Skin: no adverse effect observed (not irritating)[1] |
| **silica crystalline - quartz** | **TOXICITY** | **IRRITATION** |
| | Oral (Rat) LD50: 500 mg/kg[2] | Not Available |
| **dibutyltin dilaurate** | **TOXICITY** | **IRRITATION** |
| | dermal (rat) LD50: >2000 mg/kg[1] | Eye (Rodent - rabbit): 100mg/24H - Moderate |
| | Oral (Rat) LD50: 175 mg/kg[2] | Eye: adverse effect observed (irritating)[1] |
| | | Skin (Rodent - rabbit): 500mg - Severe |
| | | Skin: no adverse effect observed (not irritating)[1] |
| **red iron oxide** | **TOXICITY** | **IRRITATION** |
| | Oral (Rat) LD50: >5000 mg/kg[2] | Eye: no adverse effect observed (not irritating)[1] |
| | | Skin: no adverse effect observed (not irritating)[1] |

| | |
|---|---|
| ***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*** |

| | |
|---|---|
| **POLYPROPYLENE GLYCOL GLYCERYL ETHER** | Data for Niax Polyol L-56 Data for Niax Polyol LG-168 * BASF Multranol 9175 SDS |
| **BUTYLATED TRIPHENYL PHOSPHATE** | This material has been determined not to be a primary eye irritant in rabbits. This material has been determined not to be a primary skin irritant in rabbits. This product is expected to have low acute oral and dermal toxicity. No evidence of delayed neurotoxicity was observed in rats and hens following acute exposure. This material was not determined to be mutagenic in the Ames Test, in a mouse lymphoma forward mutation assay and a mouse lymphoma cytogenetic assay. * Chemtura MSDS (for similar product) In an oral reproductive/developmental toxicity study in rats, doses of 50, 250 or 1000 mg/kg/day were administered by gavage. During the study no treatment related effects were seen in any end points measured. There were no treatment related histological changes in the reproductive organs. Further, there were no significant differences in litter size or the number of live pups on postnatal days 0 and 4. The NOAEL for reproductive toxicity is 1000 mg/kg/day. A rat reproductive study is reported in the literature and was conducted using a butylated triphenyl phosphate based hydraulic fluid dosed at 600 mg/kg, 1,000 mg/kg and 1,700 mg/kg. The authors reported that fertility indices were reduced at doses of 1,000 mg/kg and higher. A NOAEL was established at 600 mg/kg. Because the report is unclear regarding the actual composition of the hydraulic fluid and certain deficiencies in study method exist (e.g. selection of rat strain, statistical analysis), this study may not accurately represent effects of all butylated triphenyl phosphate products. In an oral teratology study in rats, doses of 100, 400, or 1000 mg/kg/day was administered by gavage. There was no treatment related effects on the number of corpora lutea, implants, resorption sites, or live foetuses per dam. There was no effect on litter size or fetal weights for the mid and low dose groups. The high dose group showed significantly reduced foetal weights, probably due to maternal toxicity. There were no significant increases in external, soft tissue, or skeletal anomalies in any treatment group. Treatment did not result in developmental toxicity. Epidemiology studies completed in 1977 and 1985 of current and former workers at the production facility where Kronitex and Durad, natural and synthetic triaryl phosphate esters are manufactured have not demonstrated any unusual pattern of mortality or disease.<br>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. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.<br>The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |
| **SILICA CRYSTALLINE - QUARTZ** | **WARNING:** For inhalation exposure ONLY: This substance has been classified by the IARC as Group 1: **CARCINOGENIC TO HUMANS**<br><br>The International Agency for Research on Cancer (IARC) has classified occupational exposures to **respirable** (<5 um) crystalline silica as being carcinogenic to humans . This classification is based on what IARC considered sufficient evidence from epidemiological studies of |

**Continued...**

| | |
|---|---|
| | humans for the carcinogenicity of inhaled silica in the forms of quartz and cristobalite. Crystalline silica is also known to cause silicosis, a non-cancerous lung disease.<br>Intermittent exposure produces; focal fibrosis, (pneumoconiosis), cough, dyspnoea, liver tumours.<br><br>* Millions of particles per cubic foot (based on impinger samples counted by light field techniques).<br>NOTE : the physical nature of quartz in the product determines whether it is likely to present a chronic health problem. To be a hazard the material must enter the breathing zone as respirable particles. |
| **DIBUTYLTIN DILAURATE** | Exposure to the material may result in a possible risk of irreversible effects. The material may produce mutagenic effects in man. This concern is raised, generally, on the basis of<br>appropriate studies using mammalian somatic cells in vivo. Such findings are often supported by positive results from in vitro mutagenicity studies. |
| **POLYPROPYLENE GLYCOL GLYCERYL ETHER & BUTYLATED TRIPHENYL PHOSPHATE** | The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis. |
| **BUTADIENE HOMOPOLYMER, HYDROXYL FUNCTIONALISED & ALUMINIUM HYDROXIDE** | No significant acute toxicological data identified in literature search. |

| | | | |
|---|---|---|---|
| **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 either not available or does not fill the criteria for classification***
✓ ***– Data available to make classification***

## SECTION 12 Ecological information

**Toxicity**

**Compound 53 Part A - Resin**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**polypropylene glycol glyceryl ether**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| BCF | 1008h | Fish | 0.2-2.2 | 7 |
| EC50 | 72h | Algae or other aquatic plants | >100mg/l | 2 |
| NOEC(ECx) | 504h | Crustacea | >=10mg/l | 2 |
| EC50 | 48h | Crustacea | >100mg/l | 2 |
| LC50 | 96h | Fish | >1000mg/l | 2 |

**butylated triphenyl phosphate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 96h | Algae or other aquatic plants | 2.6mg/l | 2 |
| EC50 | 72h | Algae or other aquatic plants | 1.4mg/l | 2 |
| EC50(ECx) | 48h | Crustacea | 3.2-4.7mg/l | Not Available |
| LC50 | 96h | Fish | 2.8-4mg/l | Not Available |
| EC50 | 48h | Crustacea | 3.2-4.7mg/l | Not Available |

**butadiene homopolymer, hydroxyl functionalised**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**aluminium hydroxide**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| LC50 | 96h | Fish | 0.57mg/l | 2 |
| EC50 | 96h | Algae or other aquatic plants | 0.005mg/L | 2 |
| EC50 | 72h | Algae or other aquatic plants | 0.017mg/L | 2 |
| NOEC(ECx) | 72h | Algae or other aquatic plants | >100mg/l | 1 |
| EC50 | 48h | Crustacea | >0.065mg/l | 4 |

**silica crystalline - quartz**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| Not Available | Not Available | Not Available | Not Available | Not Available |

**dibutyltin dilaurate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| BCF | 1344h | Fish | 2.2-40 | 7 |
| EC50 | 72h | Algae or other aquatic plants | >1mg/l | 2 |
| EC50(ECx) | 48h | Crustacea | <0.463mg/L | 2 |

**Continued...**

| | | | | | |
|---|---|---|---|---|---|
| | EC50 | 48h | Crustacea | <0.463mg/L | 2 |
| | LC50 | 96h | Fish | 21.2mg/l | 2 |

**red iron oxide**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 72h | Algae or other aquatic plants | 18mg/l | 2 |
| NOEC(ECx) | 504h | Fish | 0.52mg/l | 2 |
| EC50 | 48h | Crustacea | >100mg/l | 2 |
| LC50 | 96h | Fish | 0.05mg/l | 2 |

***Legend:*** ***Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 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***

Toxic 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 |
|---|---|---|
| butylated triphenyl phosphate | HIGH | HIGH |
| dibutyltin dilaurate | HIGH | HIGH |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| polypropylene glycol glyceryl ether | LOW (BCF = 7) |
| butylated triphenyl phosphate | LOW (LogKOW = 10.43) |
| dibutyltin dilaurate | LOW (BCF = 110) |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| butylated triphenyl phosphate | LOW (Log KOC = 565800) |
| dibutyltin dilaurate | LOW (Log KOC = 64610000) |

### Other adverse effects

No evidence of ozone depleting properties were found in the current literature.

## SECTION 13 Disposal considerations

### Waste treatment methods

**Product / Packaging disposal**

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and SDS and observe all notices pertaining to the product.

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.
A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. If it has been contaminated, it may be possible to reclaim the product by filtration, distillation or some other means. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate.

- **DO NOT** allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

## SECTION 14 Transport information

### Labels Required




**Continued...**

| | |
|---|---|
| **Marine Pollutant** |  |

Shipping container, transport vehicle placarding, and labeling may vary from the below information. This depends on the quantity shipped, the applicability of excepted quantity requirements, limited quantity requirements, and/or special provisions according to US DOT, IATA and IMDG regulations. In case of reshipment, it is the responsibility of the shipper to determine the appropriate labels and markings in accordance with applicable transport regulations.

**Land transport (DOT)**

| | |
|---|---|
| 14.1. **UN number or ID number** | 3082 |
| 14.2. **UN proper shipping name** | Environmentally hazardous substance, liquid, n.o.s. (contains butylated triphenyl phosphate) |
| 14.3. **Transport hazard class(es)** | Class: 9<br>Subsidiary Hazard: Not Applicable |
| 14.4. **Packing group** | III |
| 14.5. **Environmental hazard** | Environmentally hazardous |
| 14.6. **Special precautions for user** | Hazard Label: 9<br>Special provisions: 8, 146, 173, 335, 441, IB3, T4, TP1, TP29 |

For Individual Packages of Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 that contain LESS THAN the reportable quantity - Not Regulated.
For Individual Packages of Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082 that contain EQUAL OR MORE THAN the reportable quantity - Regulated.

**Air transport (ICAO-IATA / DGR)**

| | |
|---|---|
| 14.1. **UN number** | 3082 |
| 14.2. **UN proper shipping name** | Environmentally hazardous substance, liquid, n.o.s. (contains butylated triphenyl phosphate) |
| 14.3. **Transport hazard class(es)** | ICAO/IATA Class: 9<br>ICAO / IATA Subsidiary Hazard: Not Applicable<br>ERG Code: 9L |
| 14.4. **Packing group** | III |
| 14.5. **Environmental hazard** | Environmentally hazardous |
| 14.6. **Special precautions for user** | Special provisions: A97 A158 A197 A215<br>Cargo Only Packing Instructions: 964<br>Cargo Only Maximum Qty / Pack: 450 L<br>Passenger and Cargo Packing Instructions: 964<br>Passenger and Cargo Maximum Qty / Pack: 450 L<br>Passenger and Cargo Limited Quantity Packing Instructions: Y964<br>Passenger and Cargo Limited Maximum Qty / Pack: 30 kg G |

**Sea transport (IMDG-Code / GGVSee)**

| | |
|---|---|
| 14.1. **UN number** | 3082 |
| 14.2. **UN proper shipping name** | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains butylated triphenyl phosphate) |
| 14.3. **Transport hazard class(es)** | IMDG Class: 9<br>IMDG Subsidiary Hazard: Not Applicable |
| 14.4. **Packing group** | III |
| 14.5 **Environmental hazard** | Marine Pollutant |
| 14.6. **Special precautions for user** | EMS Number: F-A , S-F<br>Special provisions: 274 335 969<br>Limited Quantities: 5 L |

**14.7. Maritime transport in bulk according to IMO instruments**

**14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**14.7.2. Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

| Product name | Group |
|---|---|
| polypropylene glycol glyceryl ether | Not Available |
| butylated triphenyl phosphate | Not Available |

**Continued...**

| Product name | Group |
|---|---|
| butadiene homopolymer, hydroxyl functionalised | Not Available |
| aluminium hydroxide | Not Available |
| silica crystalline - quartz | Not Available |
| dibutyltin dilaurate | Not Available |
| red iron oxide | Not Available |

**14.7.3. Transport in bulk in accordance with the IGC Code**

| Product name | Ship Type |
|---|---|
| polypropylene glycol glyceryl ether | Not Available |
| butylated triphenyl phosphate | Not Available |
| butadiene homopolymer, hydroxyl functionalised | Not Available |
| aluminium hydroxide | Not Available |
| silica crystalline - quartz | Not Available |
| dibutyltin dilaurate | Not Available |
| red iron oxide | Not Available |

## SECTION 15 Regulatory information

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

**polypropylene glycol glyceryl ether is found on the following regulatory lists**

US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants
US - Pennsylvania - Hazardous Substance List
US New York City Community Right-to-Know: List of Hazardous Substances
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**butylated triphenyl phosphate is found on the following regulatory lists**

US - California - Biomonitoring - Priority Chemicals
US EPA Substance Registry Services (SRS) - 2020 CDR TSCA 4 TR
US New York City Community Right-to-Know: List of Hazardous Substances
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**butadiene homopolymer, hydroxyl functionalised is found on the following regulatory lists**

US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**aluminium hydroxide is found on the following regulatory lists**

International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US DOE Temporary Emergency Exposure Limits (TEELs)
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**silica crystalline - quartz is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans
US - California Proposition 65 - Carcinogens
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Carcinogens
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US DOE Temporary Emergency Exposure Limits (TEELs)
US National Toxicology Program (NTP) 15th Report Part A Known to be Human Carcinogens
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Carcinogens Listing
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**dibutyltin dilaurate is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
US DOE Temporary Emergency Exposure Limits (TEELs)
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**red iron oxide is found on the following regulatory lists**

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5

**Continued...**

US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US DOE Temporary Emergency Exposure Limits (TEELs)
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

### Additional Regulatory Information

Not Applicable

### 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 | Yes |
| Skin Corrosion or Irritation | No |
| Respiratory or Skin Sensitization | Yes |
| Serious eye damage or eye irritation | Yes |
| Specific target organ toxicity (single or repeated exposure) | Yes |
| Aspiration Hazard | No |
| Germ cell mutagenicity | Yes |
| Simple Asphyxiant | No |
| Hazards Not Otherwise Classified | No |

**US. EPA CERCLA Hazardous Substances and Reportable Quantities (40 CFR 302.4)**

None Reported

**US. EPCRA Section 313 Toxic Release Inventory (TRI) (40 CFR 372)**

None Reported

### Additional Federal Regulatory Information

Not Applicable

### State Regulations

**US. California Proposition 65**

**WARNING:** This product can expose you to chemicals including **silica crystalline - quartz**, which is known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov

### Additional State Regulatory Information

Not Applicable

### National Inventory Status

| National Inventory | Status |
|---|---|
| Australia - AIIC / Australia Non-Industrial Use | Yes |
| Canada - DSL | Yes |
| Canada - NDSL | No (polypropylene glycol glyceryl ether; butadiene homopolymer, hydroxyl functionalised; aluminium hydroxide; silica crystalline - quartz; dibutyltin dilaurate; red iron oxide) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | No (butadiene homopolymer, hydroxyl functionalised) |
| Japan - ENCS | No (butylated triphenyl phosphate) |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |

**Continued...**

| National Inventory | Status |
|---|---|
| Philippines - PICCS | Yes |
| USA - TSCA | All chemical substances in this product have been designated as TSCA Inventory 'Active' |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | No (polypropylene glycol glyceryl ether; butylated triphenyl phosphate) |
| Vietnam - NCI | Yes |
| Russia - FBEPH | No (butadiene homopolymer, hydroxyl functionalised) |
| ***Legend:*** | ***Yes = All CAS declared ingredients are on the inventory***<br>***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*** |

## SECTION 16 Other information

| | |
|---|---|
| **Revision Date** | 13/03/2025 |
| **Initial Date** | 20/10/2023 |

**SDS Version Summary**

| Version | Date of Update | Sections Updated |
|---|---|---|
| 5.1 | 12/03/2025 | Physical and chemical properties - Appearance, Hazards identification - Classification, Identification of the substance / mixture and of the company / undertaking - Synonyms |
| 6.1 | 13/03/2025 | Physical and chemical properties - Appearance, Identification of the substance / mixture and of the company / undertaking - Synonyms |

**Other information**

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.

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
- ES: Exposure Standard
- 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
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
- MARPOL: International Convention for the Prevention of Pollution from Ships
- IMSBC: International Maritime Solid Bulk Cargoes Code
- IGC: International Gas Carrier Code
- IBC: International Bulk Chemical Code

- AIIC: Australian Inventory of Industrial Chemicals
- DSL: Domestic Substances List
- NDSL: Non-Domestic Substances List
- IECSC: Inventory of Existing Chemical Substance in China
- EINECS: European INventory of Existing Commercial chemical Substances
- ELINCS: European List of Notified Chemical Substances
- NLP: No-Longer Polymers
- ENCS: Existing and New Chemical Substances Inventory
- KECI: Korea Existing Chemicals Inventory
- NZIoC: New Zealand Inventory of Chemicals
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- TSCA: Toxic Substances Control Act
- TCSI: Taiwan Chemical Substance Inventory
- INSQ: Inventario Nacional de Sustancias Químicas
- NCI: National Chemical Inventory
- FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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