SAFETY DATA SHEET

Compiled in accordance with REACH Regulation (EC) No 1907/2006, as retained and amended in UK law.

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name: **ESTANE® ZHF 58202 NAT 02**

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses: Wire and Cable Other

Uses advised against: None identified.

1.3 Details of the supplier of the safety data sheet

Supplier

Company Name:	LUBRIZOL ADVANCED MATERIALS EUROPE, BVBA
Address:	NIJVERHEIDSSTRAAT 30 WESTERLO-OEVEL, BE
Telephone:	+32 (0) 14 24 1611
E-mail contact:	EUSDS@lubrizol.com {Lubrizol Safety Data Sheets can be obtained at www.mylubrizol.com}

1.4 Emergency telephone number:

FOR TRANSPORT EMERGENCY CALL CHEMTREC (+1) 703 527 3887

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

The product has been classified according to the legislation in force.

Classified in accordance with CLP Regulation (EC) No 1272/2008, as retained and amended in UK law.

Skin sensitizer	Category 1	H317: May cause an allergic skin reaction.

The full text for all H-phrases is displayed in section 16.

2.2 Label elements in accordance with CLP Regulation (EC) No 1272/2008, as retained and amended in UK law.

Signal Words: Warning

Hazard Statement(s): H317: May cause an allergic skin reaction.

Precautionary Statements

Prevention: P261: Avoid breathing dust/fume/gas/mist/vapors/spray.
P280: Wear protective gloves/protective clothing/eye protection/face protection.

Response: P302+P352: IF ON SKIN: Wash with plenty of water.
P333+P313: If skin irritation or rash occurs: Get medical advice/attention.
P362+P364: Take off contaminated clothing and wash it before reuse.

Disposal: P501: Dispose of contents/ container to an approved facility in accordance with local, regional, national and international regulations.

Supplemental label information

Not applicable

Components for Label Disclosure:

Chemical name	**EC No.**
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	432-770-2

2.3 Other hazards:

Endocrine Disruption- Toxicity
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

Endocrine Disruption- Ecotoxicity
The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

Compiled in accordance with CLP Regulation (EC) No 1272/2008, as retained and amended in UK law.

Chemical name	Concentration	EC No.	REACH Registration No.	M-Factor:	Notes
Phosphinic acid, aluminum salt (3:1)	5 - 10%	479-150-8			
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	5 - 10%	253-575-7			
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	1 - 5%	432-770-2			

600, 700 and 900 ECHA List Numbers do not have any legal significance; rather they are purely technical identifiers and are displayed for informational purposes only.

Compiled in accordance with CLP Regulation (EC) No 1272/2008, as retained and amended in UK law.

Chemical name	Classification	Notes
Phosphinic acid, aluminum salt (3:1)	Aquatic Chronic 3; H412 Flam. Sol. 2; H228	
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	STOT RE 2; H373	
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Skin Sens. 1; H317 Aquatic Chronic 4; H413	

The full text for all H-phrases is displayed in section 16.

See Section 15 for Regulation (EC) No. 1907/2006 REACH Article 59(1). Candidate List (Substances of Very High Concern (SVHC))

SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation: Remove exposed person to fresh air if adverse effects are observed.

Eye contact: Any material that contacts the eye should be washed out immediately with water. If easy to do, remove contact lenses. If hot melted material should splash into the eyes, flush eyes immediately with water for 15 minutes while holding the eyelids open. Immediately call a poison center or doctor.

Skin Contact: Wash skin thoroughly with soap and water. If skin irritation or rash occurs: Get medical attention. Launder contaminated clothing before reuse. For contact with molten product, do not remove contaminated clothing. Flush skin immediately with large amounts of cold water. If possible submerge area in cold water. Pack with ice. DO NOT attempt to peel polymer from skin. Seek medical attention immediately.

Ingestion: Treat symptomatically. Get medical attention.

Personal Protection for First-aid Responders: When providing first aid always protect yourself against exposure to chemicals or blood born diseases by wearing gloves, masks and eye protection. After providing first aid wash your exposed skin with soap and water.

4.2 Most important symptoms and effects, both acute and delayed: See section 11.

4.3 Indication of any immediate medical attention and special treatment needed

Hazards: No data available.

Treatment: Treat symptomatically.

SECTION 5: Firefighting measures

General Fire Hazards: No unusual fire or explosion hazards noted.

5.1 Extinguishing media

Suitable extinguishing media: Use water spray, dry chemical or foam for extinction. CO2 may be ineffective on large fires.

Unsuitable extinguishing media: Not determined.

5.2 Special hazards arising from the substance or mixture: See section 10 for additional information.

5.3 Advice for firefighters

Special fire-fighting procedures: Thermoplastic polymers can burn. Protect product from flames; maintain proper clearance when using heat devices, etc. Irritating or toxic substances will be emitted upon burning, combustion or decomposition. Large masses of molten polymer held at elevated temperatures for extended periods of time may auto-ignite.

Special protective equipment for fire-fighters: Wear full protective firegear including self-containing breathing apparatus operated in the positive pressure mode with full facepiece, coat, pants, gloves and boots.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures: Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away. See Section 8 of the SDS for Personal Protective Equipment.

6.2 Environmental Precautions: Avoid release to the environment. Do not contaminate water sources or sewer. Environmental manager must be informed of all major spillages. Prevent further leakage or spillage if safe to do so.

6.3 Methods and material for containment and cleaning up: Pick up free solid for recycle and/or disposal.

6.4 Reference to other sections: See sections 8 and 13 for additional information.

SECTION 7: Handling and storage:

7.1 Precautions for safe handling: Contact with heated material may cause thermal burns. Wash thoroughly after handling.

Refer to Processing Guide and/or contact your local Technical Service representative for melt processing temperature range. For most thermoplastic polyurethanes, melt processing is in the range of 177 - 232 deg. C (350 - 450 deg. F), however, some products may process at different temperatures. Heating above the maximum handling temperature can generate hazardous decomposition products (see Section 10).

Fume condensates may include hazardous contaminants from additives. Condensate may be combustible and should be periodically removed from exhaust hoods, ductwork, and other surfaces. Impervious gloves should be worn during cleanup operations to prevent skin contact.

Post thermal processing activities necessary to produce molded articles (such as cutting, sanding, sawing, grinding, drilling, or regrinding) may create dust or "fines." Powders, dust, and/or fines may pose a dust explosion hazard. Avoid breathing dust.

Loading and unloading operations may cause nuisance dust to form. Electrostatic buildup may occur when pouring or transferring this product from its container. The spark produced may be sufficient to ignite vapors of flammable liquids. Always transfer product by means which avoid static buildup. Avoid pouring product directly from its container into combustible or flammable solvent.

Conduct any operations emitting fumes or vapors (including thermo-forming, heat joining, cutting and or sealing of articles and clean up) under well-ventilated conditions. Avoid breathing process vapors. Do not hold product for extended periods of time at elevated temperatures or allow thick masses of hot polymer to accumulate because they can decompose emitting hazardous gasses. Do not taste, swallow, or chew products. Wash thoroughly after processing. Do not store or consume food in processing areas. The major off-gasses from normal melt processing are expected to be water vapor and carbon dioxide. Other trace volatile organic components may also be emitted.

Do not steam sterilize articles made with thermoplastic polyurethanes. Methylene dianiline can be generated as a result.

Avoid breathing dust/fume/gas/mist/vapors/spray. Avoid contact with eyes, skin, and clothing. Observe good industrial hygiene practices. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Launder contaminated clothing before reuse.

Maximum Handling Temperature: 221 °C

7.2 Conditions for safe storage, including any incompatibilities: Store away from incompatible materials. See section 10 for incompatible materials. Store in dry, well ventilated place away from sources of heat and direct sunlight.

Maximum Storage Temperature: Not determined.

7.3 Specific end use(s): End uses are listed in an attached exposure scenario when one is required.

SECTION 8: Exposure controls/personal protection

8.1 Control Parameters

Occupational Exposure Limits

Chemical name	Type	Exposure Limit Values	Source
Talc (Mg3H2(SiO3)4) - Respirable dust.	TWA	1 mg/m3	UK. EH40 Workplace Exposure Limits (WELs), as amended (12 2011)

DNEL-Values

Critical component	Type	Route of Exposure	Health Warnings	Remarks
Phosphinic acid, aluminum salt (3:1)	General population	Eyes	Local effect;	No hazard identified
Phosphinic acid, aluminum salt (3:1)	Workers	Dermal	Systemic, long-term; 1.173 mg/kg	Repeated dose toxicity
Phosphinic acid, aluminum salt (3:1)	General population	Dermal	Systemic, long-term; 0.587 mg/kg	Repeated dose toxicity
Phosphinic acid, aluminum salt (3:1)	General population	Oral	Systemic, long-term; 0.058 mg/kg	Repeated dose toxicity
Phosphinic acid, aluminum salt (3:1)	Workers	Inhalation	Systemic, long-term; 0.821 mg/m3	Repeated dose toxicity
Phosphinic acid, aluminum salt (3:1)	Workers	Eyes	Local effect;	No hazard identified
Phosphinic acid, aluminum salt (3:1)	General population	Inhalation	Systemic, long-term; 0.205 mg/m3	Repeated dose toxicity
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	Workers	Dermal	Systemic, long-term; 16.6 mg/kg	Repeated dose toxicity
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	Workers	Inhalation	Systemic, long-term; 0.21 mg/m3	Repeated dose toxicity
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	General population	Oral	Systemic, long-term; 0.015 mg/kg	Repeated dose toxicity
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	General population	Dermal	Systemic, long-term; 8.3 mg/kg	Repeated dose toxicity
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	General population	Inhalation	Systemic, long-term; 0.053 mg/m3	Repeated dose toxicity
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	General population	Eyes	Local effect;	No hazard identified

1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	Workers	Eyes	Local effect;	No hazard identified
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	General population	Oral	Systemic, long-term; 0.417 mg/kg	Repeated dose toxicity
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Workers	Inhalation	Systemic, long-term; 5.88 mg/m3	Repeated dose toxicity
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Workers	Eyes	Local effect;	No hazard identified
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Workers	Dermal	Local, long-term; 0.827 mg/cm2	Skin Sensitisation
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	General population	Dermal	Systemic, long-term; 0.417 mg/kg	Repeated dose toxicity
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Workers	Dermal	Systemic, long-term; 0.833 mg/kg	Repeated dose toxicity
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	General population	Eyes	Local effect;	No hazard identified
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	General population	Inhalation	Systemic, long-term; 1.45 mg/m3	Repeated dose toxicity
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	General population	Dermal	Local, long-term; 0.413 mg/cm2	Skin Sensitisation

PNEC-Values

Critical component	Environmental compartment	PNEC-Values	Remarks
Phosphinic acid, aluminum salt (3:1)	Aquatic (freshwater)	418 µg/l	
Phosphinic acid, aluminum salt (3:1)	Aquatic (marine water)	42 µg/l	
Phosphinic acid, aluminum salt (3:1)	Soil	0.1 mg/kg	
Phosphinic acid, aluminum salt (3:1)	Sewage treatment plant	10 mg/l	
Phosphinic acid, aluminum salt (3:1)	Sediment (marine water)	0.0818 mg/kg	
Phosphinic acid, aluminum salt (3:1)	Sediment (freshwater)	0.818 mg/kg	
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Sediment (marine water)	0.237 mg/kg	
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Predator	0.833 mg/kg	Oral
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Aquatic (freshwater)	0 mg/l	

Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Sewage treatment plant	100 mg/l	
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Soil	2.84 mg/kg	
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Aquatic (marine water)	0 mg/l	
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Sediment (freshwater)	2.37 mg/kg	

8.2 Exposure controls

Appropriate engineering controls: No special requirements under ordinary conditions of use and with adequate ventilation. Thermal processing operations should be ventilated to control gases and fumes given off during processing.

Individual protection measures, such as personal protective equipment

General information: Please follow the recommended personal protective equipment (PPE) guidelines below and refer to the appropriate EN standard where applicable. Use personal protective equipment as required.

Eye/face protection: If contact is likely, safety glasses with side shields are recommended. Eye protection should meet the standards set out in EN 166.

Skin protection

Hand Protection: To avoid burns from contact with molten product, use thermal insulating gloves.

General: Because specific work environments and material handling practices vary, safety procedures should be specific for each intended application. The correct choice of protective gloves depends upon the chemicals being handled, and the conditions of work and use. Most gloves provide protection for only a limited time before they must be discarded and replaced (even the best chemically resistant gloves will break down after repeated chemical exposures). Gloves should be chosen in consultation with the supplier / manufacturer and taking account of a full assessment of the working conditions. For typical use and handling of chemical substances, gloves should meet the standards set out in EN 374. For applications involving mechanical risks with potential for abrasion or puncture, the standards set out in EN 388 should be considered. For tasks involving thermal hazards, the standards set out in EN 407 should be considered.

Break-through time: Breakthrough time data are generated by glove manufacturers under laboratory test conditions and represent how long a glove can be expected to provide effective permeation resistance. It is important when following breakthrough time recommendations that actual workplace conditions are taken into account. Always consult with your glove supplier for up-to-date technical information on breakthrough times for the recommended glove type.
For continuous contact, we suggest gloves with a minimum breakthrough time of 240 minutes, or > 480 minutes if suitable gloves can be obtained. If suitable gloves are not available to offer that level of protection, gloves with shorter breakthrough times may be acceptable as long as appropriate glove maintenance and replacement regimes are determined and adhered to.
For short-term, transient exposures and splash protection, gloves with shorter breakthrough times may commonly be used. Therefore, appropriate maintenance and replacement regimes must be determined and rigorously followed.

Glove thickness: For general applications, we recommend gloves with a thickness typically greater than 0.35 mm.
It is important to note that glove thickness is not the only 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.
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.
Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example: 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, before being disposed of. 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.

Other: Gloves, coveralls, apron, boots as necessary to minimize contact. Do not wear rings, watches or similar apparel that could entrap the material. Long sleeve shirt is recommended.

Respiratory Protection: Consult with an industrial hygienist to determine the appropriate respiratory protection for your specific use of this material. A respiratory protection program compliant with all applicable regulations must be followed whenever workplace conditions require the use of a respirator. Under normal use conditions, respirator is not usually required. Use appropriate respiratory protection if exposure to dust particles, mist or vapors is likely. Cutting operations may create small particles from this product. If inhalation of particles cannot be avoided, wear a dust respirator.

	Respiratory Protective Equipment (RPE) is not normally required where there is adequate natural or local exhaust ventilation to control exposure. In case of insufficient ventilation, wear suitable respiratory equipment. The correct choice of respiratory protection depends upon the chemicals being handled, the conditions of work and use, and the condition of the respiratory equipment. Safety procedures should be developed for each intended application. Respiratory protection equipment should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions. Please refer to the relevant EN standards for the RPE selected.
Hygiene measures:	Observe good industrial hygiene practices. Avoid contact with skin. Contaminated work clothing should not be allowed out of the workplace.
Environmental Controls:	No data available. See section 6 for details.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance	
Physical state:	solid
Form:	Pellets
Color:	White
Odor:	Faint
Odor Threshold:	No data available.
pH:	Not applicable based on solubility in water.
Melting Point:	No data available.
Boiling Point:	No data available.
Flash Point:	Not applicable.
Evaporation Rate:	No data available.
Flammability (solid, gas):	No data available.
Upper/lower limit on flammability or explosive limits	
Flammability Limit - Upper (%):	No data available.
Flammability Limit - Lower (%):	No data available.
Vapor pressure:	No data available.
Relative vapor density:	No data available.
Relative density:	1.0 - 1.1 (20 °C)
Solubility(ies)	
Solubility in Water:	Insoluble in water
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Autoignition Temperature:	No data available.
Decomposition Temperature:	No data available.
Viscosity:	No data available.
Explosive properties:	No data available.

Oxidizing properties: No data available.
VOC Content: No data available.

Particle characteristics

Particle Size:	Not applicable
Particle Size Distribution:	Not applicable
Specific surface area:	Not applicable
Surface charge/Zeta potential:	Not applicable
Assessment:	Not applicable
Shape:	Not applicable
Crystallinity:	Not applicable
Surface treatment:	Not applicable

SECTION 10: Stability and reactivity

10.1 Reactivity: No data available.

10.2 Chemical Stability: Material is stable under normal conditions.

10.3 Possibility of hazardous reactions: Will not occur.

10.4 Conditions to avoid: None known.

10.5 Incompatible Materials: None known, avoid contact with reactive chemicals.

10.6 Hazardous Decomposition Products: May also include isocyanates and small amounts of hydrogen cyanide. Thermal decomposition or combustion may generate smoke, carbon monoxide, carbon dioxide , nitrogen oxides, and other products of incomplete combustion. Thermal decompositon may generate magnesium oxides and other magnesium containing compounds. Thermal decompositon may generate phosphorus oxides and other phosphorus containing compounds.

SECTION 11: Toxicological information

Information on likely routes of exposure

Inhalation: No data available.

Ingestion: No data available.

Skin Contact: No data available.

Eye contact: No data available.

11.1 Information on toxicological effects

Acute toxicity

Oral

Product: May cause irritation of the gastrointestinal tract. Not classified for

acute toxicity based on available data.

Dermal

Product:	Not classified for acute toxicity based on available data.

Inhalation

Product:	Not classified for acute toxicity based on available data. Avoid the inhalation of dust, mists, or vapors.

Skin Corrosion/Irritation:

Product:	Remarks: Not classified as a primary skin irritant. Pre-existing skin conditions may be aggravated by prolonged or repeated exposure.

Serious Eye Damage/Eye Irritation:

Product:	Remarks: Not classified as a primary eye irritant.

Respiratory sensitization:

Product:	Remarks: Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization.

Skin sensitization:

Product:	Remarks: Under decomposition conditions, isocyanates may be generated from this product. Isocyanates can cause skin sensitization and/or respiratory sensitization.
Phosphinic acid, aluminum salt (3:1)	Classification: Not a skin sensitizer. (Measured)
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	Classification: Not a skin sensitizer. (Literature) Not a skin sensitizer.
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	Classification: May cause sensitization by skin contact. (Supplier information) Remarks: Category 1

Specific Target Organ Toxicity - Single Exposure:

No data available

Aspiration Hazard:

No data available

Chronic Effects

Carcinogenicity:

No data available

Germ Cell Mutagenicity:

1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	This material has not exhibited mutagenic or genotoxic potential in laboratory tests.

Reproductive toxicity:

No data available

Specific Target Organ Toxicity - Repeated Exposure:

1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	Prolonged or repeated exposure may cause kidney damage. Oral: Target Organ(s): Kidney

11.2 Information on health hazards

Other hazards

Product: No data available.

Endocrine Disruption

Product: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.;

SECTION 12: Ecological information

12.1 Ecotoxicity

Fish

Phosphinic acid, aluminum salt (3:1)	LC 50 (Zebra Fish, 96 h): > 100 mg/l
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	LC 50 (Zebra Fish, 4 d): > 10,000 mg/l

Aquatic Invertebrates

Phosphinic acid, aluminum salt (3:1)	EC 50 (Water flea (Daphnia magna), 48 h): > 100 mg/l
1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	EC 50 (Water flea (Daphnia magna), 2 d): > 101 mg/l

Toxicity to Aquatic Plants

Phosphinic acid, aluminum salt (3:1)	EC 50 (Algae (Pseudokirchneriella subcapitata), 72 h): > 100 mg/l

Toxicity to soil dwelling organisms

No data available

Sediment Toxicity

No data available

Toxicity to Terrestrial Plants

No data available

Toxicity to Above-Ground Organisms

No data available

Toxicity to microorganisms

1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	EC 50 (Sludge, 0.1 d): > 10,000 mg/l

12.2 Persistence and Degradability

Biodegradation

1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	OECD TG 301 B, 3 %, 28 d, Not readily degradable.

BOD/COD Ratio

No data available

12.3 Bioaccumulative potential

Bioconcentration Factor (BCF)

No data available

Partition Coefficient n-octanol / water (log Kow)

1,3,5-Triazine-2,4,6(1H,3H,5H)-trione, compound with 1,3,5-triazine-2,4,6-triamine (1:1)	Log Kow: -2.28 (Measured)

12.4 Mobility:

No data available

12.5 Results of PBT and vPvB assessment

No data available

12.6 Endocrine Disruption:

Product:	The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Disposal methods:	Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Dispose of packaging or containers in accordance with local, regional, national and international regulations. Empty container contains product residue which may exhibit hazards of product.

Contaminated Packaging: Container packaging may exhibit hazards.

SECTION 14: Transport information

ADR
Not regulated.

IMDG
Not regulated.

IATA
Not regulated.

14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code
None known.

Shipping descriptions may vary based on mode of transport, quantities, temperature of the material, package size, and/or origin and destination. It is the responsibility of the transporting organization to follow all applicable laws, regulations and rules relating to the transportation of the material. For transportation, steps must be taken to prevent load shifting or materials falling, and all relating legal statutes should be obeyed. Review classification requirements before shipping materials at elevated temperatures.

SECTION 15: Regulatory information

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

EU Regulations
EU. Regulation 1005/2009/EC on substances that deplete the ozone layer, Annex I, Controlled Substances:
None present or none present in regulated quantities.

EU. Regulation 2019/1021/EU on persistent organic pollutants (POPs) (recast), as amended:
None present or none present in regulated quantities.

EU. Chemicals Subject to PIC Procedure: Regulation 649/2012/EU on export and import of dangerous chemicals, as amended:
None present or none present in regulated quantities.

Regulation (EC) No. 1907/2006, REACH Article 59(1). Candidate List:
None present or none present in regulated quantities.

Regulation (EC) No. 1907/2006, REACH Annex XIV Substances subject to authorisation, as amended:
None present or none present in regulated quantities.

Regulation (EC) No. 1907/2006 Annex XVII Substances subject to restriction on marketing and use:

Chemical name	EC No.	Concentration
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	432-770-2	1.0 - 10%

Directive 2004/37/EC on the protection of workers from the risks related to exposure to carcinogens and mutagens at work.:
None present or none present in regulated quantities.

Directive 92/85/EEC: on the safety and health of pregnant workers and workers who have recently given birth or are breast feeding.:
None present or none present in regulated quantities.

EU. Directive 2012/18/EU (SEVESO III) on major accident hazards involving dangerous substances, Annex I:

None present or none present in regulated quantities.

EU. Regulation No. 166/2006 PRTR (Pollutant Release and Transfer Registry), Annex II: Pollutants:
None present or none present in regulated quantities.

Directive 98/24/EC on the protection of workers from the risks related to chemical agents at work:

Chemical name	EC No.	Concentration
Tetrakis(2,6-dimethylphenyl)-m-phenylene biphosphate	432-770-2	1.0 - 10%

Inventory Status

Australia (AIIC)
This product contains a substance that is not listed on the Australia Inventory of Chemical Substances.

Canada (DSL/NDSL)
This product contains one or more substances that are present on the Non-Domestic Substances List (NDSL). This product may be imported to Canada in limited quantities.

China (IECSC)
All components of this product are listed on the Inventory of Existing Chemical Substances in China.

European Union (REACh)
To obtain information on the REACH compliance status of this product, please e-mail REACH@SDSInquiries.com.

Great Britain (UK REACH)
To obtain information on the UK REACH compliance status of this product, please e-mail REACH@SDSInquiries.com.

Japan (ENCS)
This product contains a substance that is not listed on the Japanese Existing and New Chemical Substances (ENCS) list.

Korea (ECL)
All components are in compliance in Korea.

New Zealand (NZIoC)
This product requires notification before sale in New Zealand.

Philippines (PICCS)
This product requires notification before sale in the Philippines.

Switzerland (SWISS)
This product contains a substance that is not listed on the Switzerland Inventory of Notified New Substances.

Taiwan (TCSCA)
All components of this product are listed on the Taiwan inventory.

Turkey (KKDIK)
To obtain information on the KKDIK compliance status of this product, please e-mail REACH@SDSInquiries.com.

United States (TSCA)
All substances contained in this product are listed on the TSCA inventory or are exempt.

The information that was used to confirm the compliance status of this product may deviate from the chemical information shown in Section 3.

15.2 Chemical safety assessment: No Chemical Safety Assessment has been carried out.

SECTION 16: Other information

Key literature references and sources for data: Internal company data and other publically available resources.

Wording of the H-statements in section 2 and 3:

H228	Flammable solid.
H317	May cause an allergic skin reaction.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

H317 May cause an allergic skin reaction.

Other information:

Abbreviations and acronyms:

ACGIH – American Conference of Governmental Industrial Hygienist
ADR - International Carriage of Dangerous Goods by Road
AICS - Australian Inventory of Chemical Substances
ATEmix - Acute Toxicity Estimate for the mixture
BCF - Bio concentration factor
DMSO - Dimethyl sulfoxide
DSL - Domestic Substance List
EC50 - Effective concentration that gives a response in 50% of the population
ECHA - European Chemical Agency

ECL - Existing Chemical List
ENCS - Existing and New Chemical Substances
EPA – Environmental Protection Agency
IARC - International Agency for Research on Cancer
IATA - International Air Transport Association
IECSC - Inventory of Existing Chemical Substances
IMDG - International Maritime Dangerous Goods
IP 346 – A gravimetric assay used to determine the percentage weight of polycyclic aromatics in oil, via a DMSO extraction technique
LC50 - Lethal concentration required to kill 50% of the population
MARPOL - International Conventions for the Prevention of Pollution from Ships
NDSL - Non Domestic Substance List
NOAEC - No observed adverse effect concentration
NOAEL - No observed adverse effect level
NOEC - No observed effective concentration
NTP - National Toxicology Program
NZloc - New Zealand Inventory of chemicals
OECD TG - Organization for Economic Cooperation and Development Test Guidelines
OSHA – Occupational, Safety, and Health Administration
PBT – Persistent bioaccumulative toxic chemical
PEL – Permissible Exposure Level
PICCS - Philippine Inventory of Chemicals and Chemical Substances
PPE - Personal Protective Equipment
PRTR - Pollutant Release and Transfer Register
REACH - Registration, Evaluation, Authorization & restriction of Chemicals
SVHC - Substance of Very High Concern
SWISS - Switzerland chemical ordinance
TCSCA - Toxic Chemical Substance Control Act
TLV – Threshold Limit Value
TSCA - Toxic Substances Control Act
TWA – Time Weighted Average
vPvB – very Persistent very Bioaccumulative

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Reference to Regulation (EC) No. 1907/2006 (EU REACh), including but not limited to EU REACh registration numbers is provided for informational purposes only. UK REACH (EU Exit Regulation as amended) data and information will be provided as it becomes available.