

### Section 1. Identification

**GHS product identifier** : ALTIS EM 2

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

**Identified uses**

Lubricating grease

**Supplier's details** : TotalEnergies Marketing USA, Inc.  
1201 Louisiana St. Suite 1800  
Houston, TX 77002  
Phone: 713-483-5000  
ProductSafety@totalenergies.com

**Emergency telephone number (with hours of operation)** :

1-866-928-0789 (For Emergencies, call CARECHEM 24/7 Domestic)  
1-215-207-0061 (For Emergencies, call CARECHEM 24/7 International)

### Section 2. Hazards identification

**OSHA/HCS status** : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

**Classification of the substance or mixture** : TOXIC TO REPRODUCTION - Category 2

GHS label elements

**Hazard pictograms** :



**Signal word** : Warning

**Hazard statements** : Suspected of damaging fertility or the unborn child.

Precautionary statements

**Prevention** : Obtain special instructions before use. Wear protective gloves, protective clothing and eye or face protection.

**Response** : IF exposed or concerned: Get medical advice or attention.

**Storage** : Store locked up.

**Disposal** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Hazards not otherwise classified** : None known.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

Ingredient name	% (w/w)	CAS number
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	≤1	68411-46-1
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	<1	192268-65-8

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

**Additional information** : Mineral oil of petroleum origin Product containing mineral oil with less than 3% DMSO extract as measured by IP 346

**There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.**

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention if irritation occurs.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

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

#### Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : No specific data.

- Inhalation** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Skin contact** : Adverse symptoms may include the following:  
 irritation  
 dryness  
 cracking  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations
- Ingestion** : Adverse symptoms may include the following:  
 reduced fetal weight  
 increase in fetal deaths  
 skeletal malformations

**Indication of immediate medical attention and special treatment needed, if necessary**

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

**Extinguishing media**

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : No specific fire or explosion hazard.

- Hazardous thermal decomposition products** :  carbon monoxide  
 carbon dioxide  
 nitrogen oxides  
 phosphorus oxides  
 sulfur oxides  
 Hydrogen sulfide  
 Mercaptans

**Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

**Remark** :  Yes.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Small spill** : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene  reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	<b>ACGIH TLV (United States).</b> TWA: 3 mg/m <sup>3</sup> Form: Respirable dust TWA: 10 mg/m <sup>3</sup> Form: Total dust None.

**Advisory OEL** : Mineral oil mist: USA: OSHA (PEL) TWA 5 mg/m<sup>3</sup>, NIOSH (REL) TWA 5 mg/m<sup>3</sup>, STEL 10 mg/m<sup>3</sup>, ACGIH (TLV) TWA 5 mg/m<sup>3</sup> (highly refined)

**Appropriate engineering controls** : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.  
 Hydrocarbon-proof gloves  
 Fluorinated rubber  
 nitrile rubber  
 Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry into confined spaces. In case of inadequate ventilation wear respiratory protection: Type A/P2. Warning ! filters have a limited use duration. The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature (20°C / 68°F) and pressure (1013 hPa) unless otherwise indicated.

### Appearance

**Physical state** : Solid.  
**Color** : Green.  
**Odor** : Characteristic.  
**Odor threshold** : Not available.  
**pH** : Not applicable.  
**Melting point/freezing point** :  260°C (>500°F) [EN ISO 3016]  
**Boiling point** :  Not applicable.  
**Flash point** : Not applicable.  
**Evaporation rate** : Not available.  
**Flammability (solid, gas)** :  Yes.  
**Lower and upper explosive (flammable) limits** : Not applicable.  
**Vapor pressure** :  Not applicable.  
**Vapor density** : Not applicable.  
**Relative density** :  0.9 [ASTM D 4052]  
**Density** :  0.9 g/cm<sup>3</sup> [20°C] [ASTM D 4052]  
**Solubility(ies)** :

Media	Result
<input checked="" type="checkbox"/> Water	Not soluble

**Miscible with water** : No.  
**Solubility in water** :  0.851 g/l  
**Partition coefficient: n-octanol/water** :  3.5  
**Auto-ignition temperature** : Not applicable.  
**Decomposition temperature** :  260°C (>500°F)  
**Viscosity** :  Kinematic (40°C (104°F)): Not applicable.  
**Flow time (ISO 2431)** : Not available.

### Particle characteristics

**Median particle size** : Not available.

## Section 10. Stability and reactivity

**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** : No specific data.

**Incompatible materials** : No specific data.

**Hazardous decomposition products** : Carbon monoxide  
carbon dioxide  
nitrogen oxides  
phosphorus oxides  
sulfur oxides  
Hydrogen sulfide  
Mercaptans

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/substance	Result	Species	Dose	Exposure	Test
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	LD50 Oral	Rat	>5000 mg/kg	-	-
	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-	OECD 402
	LD50 Oral	Rat - Male, Female	>2000 mg/kg	-	EU B.1 Acute Toxicity (Oral)

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

#### Irritation/Corrosion

Product/substance	Result	Species	Score	Exposure	Test
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	Eyes - Iris lesion	Rabbit	0	-	EU EU Method B.5
	Skin - Edema	Rabbit	0	4 hours	EU B.4 Acute Toxicity: Dermal Irritation/ corrosion

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

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

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

#### Sensitization

Product/substance	Route of exposure	Species	Result
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	skin	Guinea pig	Not sensitizing



**Skin** : Based on available data, the classification criteria are not met.. Contains sensitizer.  
May produce an allergic reaction.

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

**Mutagenicity**

Product/substance	Test	Experiment	Result
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	OECD 471	Experiment: In vitro Subject: Bacteria	Negative

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

**Carcinogenicity**

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

**Reproductive toxicity**

**Conclusion/Summary** : Based on available data, the classification criteria are met.

**Teratogenicity**

**Conclusion/Summary** : Based on available data, the classification criteria are met.

**Specific target organ toxicity (single exposure)**

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

**Specific target organ toxicity (repeated exposure)**

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

**Aspiration hazard**

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

**Information on the likely routes of exposure** : Not available.

**Potential acute health effects**

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : Defatting to the skin. May cause skin dryness and irritation.

**Ingestion** : No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Eye contact** : No specific data.

**Inhalation** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Skin contact** : Adverse symptoms may include the following:  
irritation  
dryness  
cracking  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations

**Ingestion** : Adverse symptoms may include the following:  
reduced fetal weight  
increase in fetal deaths  
skeletal malformations



**Delayed and immediate effects and also chronic effects from short and long term exposure****Short term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Long term exposure**

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

**Potential chronic health effects**

Product/substance	Result	Species	Dose	Exposure
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	Sub-chronic NOAEL Oral	Rat - Male, Female	50 mg/kg	13 weeks; 7 days per week

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : Suspected of damaging fertility or the unborn child.

**Numerical measures of toxicity****Acute toxicity estimates**

Product/substance	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	2500	2500	N/A	N/A	N/A

**Section 12. Ecological information****Toxicity**

Product/substance	Result	Species	Exposure	Test
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	Acute EC50 >100 mg/l	Algae - Scenedesmus subspicatu	72 hours	OECD 201
	Acute EC50 >100 mg/l	Daphnia - Daphnia magna	48 hours	OECD 202
	Chronic NOEC 5.5 mg/l	Daphnia - Daphnia magna	21 days	OECD 211

**Persistence and degradability**

Product/substance	Aquatic half-life	Photolysis	Biodegradability
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	-	-	Not readily

**Bioaccumulative potential**



Product/substance	LogK <sub>ow</sub>	BCF	Potential
ALTIS EM 2 Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	>3.5	-	low
	5.1	1730	high
	4.8 to 8.8	842 to 2194	high

**Mobility in soil**

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Mobility in soil** : Given its physical and chemical characteristics, the product has no soil mobility. The product is insoluble and floats on water. Loss by evaporation is limited.

**Other adverse effects** : No known significant effects or critical hazards.

**Section 13. Disposal considerations**

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

**Section 14. Transport information**

	DOT Classification	IMDG	ICAO/IATA
<b>UN/ID No</b>	Not regulated.	Not regulated.	Not regulated.
<b>UN proper shipping name</b>	-	-	-
<b>Transport hazard class(es)</b>	-	-	-
<b>Packing group</b>	-	-	-
<b>Environmental hazards</b>	No.	No.	No.

**Additional information**

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : TSCA 8(a) PAIR: diphenylamine  
TSCA 8(a) CDR Exempt/Partial exemption: Not determined

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : TOXIC TO REPRODUCTION - Category 2

#### Composition/information on ingredients

Name	%	Classification
Benzenamine, N-phenyl-, reaction products with 2,4,4-trimethylpentene	≤1	TOXIC TO REPRODUCTION - Category 2
reaction mass of: triphenylthiophosphate and tertiary butylated phenyl derivatives	<1	TOXIC TO REPRODUCTION - Category 2

### State regulations

**Massachusetts** : The following components are listed: OIL MIST, MINERAL; OIL MIST, MINERAL

**New York** : None of the components are listed.

**New Jersey** : None of the components are listed.

**Pennsylvania** : None of the components are listed.

### California Prop. 65

To the best of our knowledge, this product does not contain any substances known to the State of California to cause cancer, developmental and/or reproductive harm

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

**Stockholm Convention on Persistent Organic Pollutants**

Not listed.

**Rotterdam Convention on Prior Informed Consent (PIC)**

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**

Not listed.

**Inventory list**

- Australia inventory (AIIC)** : At least one component is not listed.
- Canada inventory (DSL/NDSL)** : At least one component is not listed.
- China inventory (IECSC)** : All components are listed, exempted, or notified.
- Europe inventory (EC)** : All components are listed or exempted.
- Japan inventory** : **Japan inventory (CSCL)**: At least one component is not listed.  
**Japan inventory (ISHL)**: Not determined.
- New Zealand Inventory of Chemicals (NZIoC)** : Not determined.
- Philippines inventory (PICCS)** : At least one component is not listed.
- Korea inventory (KECI)** : At least one component is not listed.
- Taiwan Chemical Substances Inventory (TCSI)** : Not determined.
- Thailand inventory** : Not determined.
- Turkey inventory** : Not determined.
- United States inventory (TSCA 8b)** : Not determined.
- Vietnam inventory** : Not determined.

The information stated in this section relates solely to the conformity of the chemical product with the countries Inventories. The information used to confirm the inventory status of this product may be based on additional data to the chemical composition shown in Section 3. Other regulations may apply for importation or marketing authorizations.

## Section 16. Other information

**Hazardous Material Information System (U.S.A.)**

Health	*	2
Flammability		0
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on SDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

**National Fire Protection Association (U.S.A.)**



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### Procedure used to derive the classification

Classification	Justification
TOXIC TO REPRODUCTION - Category 2	Calculation method

### History

**Date of revision** : 2022/10/04  
**Date of previous revision** : 2022/08/22  
**Version** : 1.02

### Key to abbreviations

: ATE = Acute Toxicity Estimate  
 BCF = Bioconcentration Factor  
 GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
 IATA = International Air Transport Association  
 IBC = Intermediate Bulk Container  
 IMDG = International Maritime Dangerous Goods  
 LogPow = logarithm of the octanol/water partition coefficient  
 MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
 N/A = Not available  
 SGG = Segregation Group  
 UN = United Nations

### References

: Not available.

▣ Indicates information that has changed from previously issued version.

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.