

SAFETY DATA SHEET



Orthomodel Grey

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

1.1 Product identifier

Product name : Orthomodel Grey
UFI : MU64-70J2-A00Y-HVJY
Product code : 3DP30000
Product description : Not available.
Product type : Liquid.
Other means of identification : Not available.

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

Identified uses

Resins.

Uses advised against

Not applicable.

1.3 Details of the supplier of the safety data sheet

Scott Bader Co Ltd,
Wollaston.
Northants
NN297RL
United Kingdom
+44 (0)1933663100

e-mail address of person responsible for this SDS : SDS@scottbader.com

1.4 Emergency telephone number

National advisory body/Poison Centre

Telephone number : +44 1865 407333 (NCEC) 24h

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition : Mixture

Classification according to UK CLP/GHS

Acute Tox. 4, H302
Skin Irrit. 2, H315
Eye Dam. 1, H318
Skin Sens. 1, H317
STOT RE 2, H373

The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

Ingredients of unknown toxicity : 1.9 percent of the mixture consists of component(s) of unknown acute inhalation toxicity

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

2.2 Label elements

Orthomodel Grey

SECTION 2: Hazards identification

Hazard pictograms



Signal word

: Danger

Hazard statements

: H302 - Harmful if swallowed.
 H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H318 - Causes serious eye damage.
 H373 - May cause damage to organs through prolonged or repeated exposure.

Precautionary statements

Prevention

: Wear protective gloves. Wear eye or face protection. Do not breathe vapour. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.

Response

: Get medical advice/attention if you feel unwell. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. Take off contaminated clothing and wash it before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage

: Not applicable.

Disposal

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

Supplemental label elements

: Not applicable.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

: Not applicable.

Special packaging requirements

Containers to be fitted with child-resistant fastenings

: Not applicable.

Tactile warning of danger

: Not applicable.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII

: This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

Other hazards which do not result in classification

: None known.

SECTION 3: Composition/information on ingredients

3.2 Mixtures

: Mixture

Product/ingredient name	Identifiers	%	Classification	Type
4-(1-oxo-2-propenyl)-morpholine	EC: 418-140-1 CAS: 5117-12-4 Index: 613-222-00-3	≥25 - ≤50	Acute Tox. 4, H302 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT RE 2, H373 (oral)	[1]
oxybis(methyl-2,1-ethanediyl) diacrylate	REACH #: 01-2119484629-21 EC: 260-754-3 CAS: 57472-68-1	≥10 - ≤25	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317	[1]
phenyl bis(2,4,6-trimethylbenzoyl)-	REACH #:	≤3	Acute Tox. 4, H302	[1]

Orthomodel Grey

SECTION 3: Composition/information on ingredients

phosphine oxide	01-2119489401-38 EC: 423-340-5 CAS: 162881-26-7 Index: 015-189-00-5 CAS: 111497-86-0	<1	Acute Tox. 4, H312 Skin Sens. 1A, H317 Aquatic Chronic 4, H413 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1B, H317	[1]
2-Propenoic acid, 1,1'-[(1-methyl-1,2-ethanediy)bis[oxy(methyl-2,1-ethanediy)]] ester, reaction products with diethylamine	REACH #: 01-2119489379-17 EC: 236-675-5 CAS: 13463-67-7	≤0.3	Not classified.	[2]
titanium dioxide	REACH #: 01-2119489379-17 EC: 236-675-5 CAS: 13463-67-7	≤0.1	Muta. 2, H341 Repr. 1B, H360 STOT RE 1, H372 (immune system) Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317	[1] [2]
dibutyltin dilaurate	EC: 201-039-8 CAS: 77-58-7	≤0.1	Muta. 2, H341 Repr. 1B, H360 STOT RE 1, H372 (immune system) Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317	[1] [2]
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	EC: 227-561-6 CAS: 5888-33-5 Index: 607-756-00-6	<0.1	Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1A, H317	[1]
2,6-di-tert-butyl-p-cresol	REACH #: 01-2119565113-46 EC: 204-881-4 CAS: 128-37-0	<0.1	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1] [2]
carbon black, respirable powder	REACH #: 01-2119384822-32 EC: 215-609-9 CAS: 1333-86-4	≤0.1	Not classified.	[2]
See Section 16 for the full text of the H statements declared above.				

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, are PBTs, vPvBs or Substances of equivalent concern, or have been assigned a workplace exposure limit and hence require reporting in this section.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

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

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.

Inhalation : Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Orthomodel Grey

SECTION 4: First aid measures

- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. 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.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

4.2 Most important symptoms and effects, both acute and delayed

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
- Ingestion** : Adverse symptoms may include the following:
stomach pains

4.3 Indication of any immediate medical attention and special treatment needed

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.

SECTION 5: Firefighting measures

5.1 Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

5.2 Special hazards arising from the substance or mixture

- Hazards from the substance or mixture** : In a fire or if heated, a pressure increase will occur and the container may burst.
- Hazardous combustion products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
phosphorus oxides

SECTION 5: Firefighting measures

5.3 Advice for firefighters

- 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. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to British standard BS EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures

6.1 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 spilt material. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised 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".

6.2 Environmental precautions

- : Avoid dispersal of spilt 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).

6.3 Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach the release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations.

6.4 Reference to other sections

- : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

7.1 Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. 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.

Orthomodel Grey

SECTION 7: Handling and storage

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.

7.2 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

7.3 Specific end use(s)

Recommendations : Not available.

Industrial sector specific solutions : Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
titanium dioxide	EH40/2005 WELs (United Kingdom (UK), 1/2020) TWA 8 hours: 10 mg/m ³ . Form: total inhalable. TWA 8 hours: 4 mg/m ³ . Form: respirable.
dibutyltin dilaurate	EH40/2005 WELs (United Kingdom (UK), 1/2020) [tin compounds, organic, except cyhexatin (ISO)] Absorbed through skin. STEL 15 minutes: 0.2 mg/m ³ (as Sn). TWA 8 hours: 0.1 mg/m ³ (as Sn).
2,6-di-tert-butyl-p-cresol	EH40/2005 WELs (United Kingdom (UK), 1/2020) TWA 8 hours: 10 mg/m ³ .
Carbon black	EH40/2005 WELs (United Kingdom (UK), 1/2020) STEL 15 minutes: 7 mg/m ³ . TWA 8 hours: 3.5 mg/m ³ .

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to monitoring standards, such as the following: British Standard BS EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) British Standard BS EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) British Standard BS EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Result
4-(1-oxo-2-propenyl)-morpholine	DNEL - Workers - Short term - Inhalation 132.24 mg/m ³ Effects: Systemic
	DNEL - Workers - Long term - Inhalation 2.65 mg/m ³ Effects: Systemic
	DNEL - Workers - Short term - Dermal

Orthomodel Grey

SECTION 8: Exposure controls/personal protection

300 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Dermal

1.87 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Oral

0.37 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Dermal

0.37 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Inhalation

0.37 mg/m³

Effects: Systemic

oxybis(methyl-2,1-ethanediyl) diacrylate

DNEL - Workers - Long term - Dermal

1.7 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Inhalation

2.35 mg/m³

Effects: Systemic

phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

DNEL - Workers - Long term - Inhalation

21 mg/m³

Effects: Systemic

DNEL - Workers - Short term - Inhalation

21 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Dermal

3.3 mg/kg

Effects: Systemic

DNEL - Workers - Short term - Dermal

3.3 mg/kg

Effects: Systemic

DNEL - General population - Consumers - Long term - Inhalation

5.2 mg/m³

Effects: Systemic

DNEL - General population - Consumers - Long term - Dermal

1.5 mg/kg

Effects: Systemic

DNEL - General population - Consumers - Long term - Oral

1.5 mg/kg

Effects: Systemic

DNEL - General population - Short term - Oral

1.67 ng/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Oral

1.5 mg/kg bw/day

Effects: Systemic

Orthomodel Grey

SECTION 8: Exposure controls/personal protection

DNEL - General population - Long term - Dermal

1.5 mg/kg bw/day

Effects: Systemic

DNEL - General population - Short term - Dermal

1.67 mg/kg bw/day

Effects: Systemic

DNEL - General population - Short term - Inhalation

1.93 mg/m³

Effects: Systemic

DNEL - General population - Long term - Inhalation

1.93 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Dermal

3 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Short term - Dermal

3.33 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Short term - Inhalation

7.84 mg/m³

Effects: Systemic

DNEL - Workers - Long term - Inhalation

7.84 mg/m³

Effects: Systemic

titanium dioxide

DNEL - General population - Long term - Inhalation

28 µg/m³

Effects: Local

DNEL - Workers - Long term - Inhalation

170 µg/m³

Effects: Local

dibutyltin dilaurate

DNEL - General population - Long term - Oral

0.0031 mg/kg bw/day

Effects: Systemic

DNEL - General population - Long term - Inhalation

0.0046 mg/m³

Effects: Systemic

DNEL - General population - Short term - Oral

0.02 mg/kg bw/day

Effects: Systemic

DNEL - Workers - Long term - Inhalation

0.02 mg/m³

Effects: Systemic

DNEL - General population - Short term - Inhalation

0.04 mg/m³

Effects: Systemic

DNEL - Workers - Short term - Inhalation

0.059 mg/m³

Effects: Systemic

Orthomodel Grey

SECTION 8: Exposure controls/personal protection

	<p>DNEL - General population - Long term - Dermal 0.16 mg/kg bw/day <u>Effects</u>: Systemic</p>
	<p>DNEL - Workers - Long term - Dermal 0.43 mg/kg bw/day <u>Effects</u>: Systemic</p>
	<p>DNEL - General population - Short term - Dermal 0.5 mg/kg bw/day <u>Effects</u>: Systemic</p>
	<p>DNEL - Workers - Short term - Dermal 2.08 mg/kg bw/day <u>Effects</u>: Systemic</p>
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	<p>DNEL - General population - Long term - Oral 0.83 mg/kg bw/day <u>Effects</u>: Systemic</p> <p>DNEL - General population - Long term - Dermal 0.83 mg/kg bw/day <u>Effects</u>: Systemic</p> <p>DNEL - Workers - Long term - Dermal 1.39 mg/kg bw/day <u>Effects</u>: Systemic</p> <p>DNEL - General population - Long term - Inhalation 1.45 mg/m³ <u>Effects</u>: Systemic</p> <p>DNEL - Workers - Long term - Inhalation 4.9 mg/m³ <u>Effects</u>: Systemic</p>
2,6-di-tert-butyl-p-cresol	<p>DNEL - Workers - Long term - Inhalation 3.5 mg/kg bw/day <u>Effects</u>: Systemic</p> <p>DNEL - General population - Long term - Oral 0.25 mg/kg bw/day <u>Effects</u>: Systemic</p> <p>DNEL - General population - Long term - Dermal 0.25 mg/kg bw/day <u>Effects</u>: Systemic</p> <p>DNEL - General population - Long term - Inhalation 0.435 mg/m³ <u>Effects</u>: Systemic</p> <p>DNEL - Workers - Long term - Dermal 0.5 mg/kg bw/day <u>Effects</u>: Systemic</p> <p>DNEL - Workers - Long term - Inhalation 1.76 mg/m³ <u>Effects</u>: Systemic</p>
Carbon black	<p>DNEL - General population - Long term - Inhalation 0.06 mg/m³ <u>Effects</u>: Systemic</p>

Orthomodel Grey

SECTION 8: Exposure controls/personal protection

DNEL - Workers - Long term - Inhalation

1 mg/m³

Effects: Systemic

PNECs

Product/ingredient name

titanium dioxide

Result

Fresh water

0.127 mg/l

Marine water

≥1 mg/l

Fresh water sediment

≥1000 mg/l

Marine water sediment

≥100 mg/l

Soil

100 mg/l

Sewage Treatment Plant

≥100 mg/l

2,6-di-tert-butyl-p-cresol

Fresh water

0.199 µg/l

Marine water

0.0199 µg/l

Sediment

99.6 µg/l

Soil

47.69 µg/l

8.2 Exposure controls

Appropriate engineering controls

- : If user operations generate dust, fumes, gas, vapour 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.

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. Contaminated work clothing should not be allowed out of the workplace. 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: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

SECTION 8: Exposure controls/personal 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.
- 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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.
- 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.

SECTION 9: Physical and chemical properties

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

9.1 Information on basic physical and chemical properties**Appearance**

- Physical state** : Liquid.
- Colour** : Grey.
- Odour** : Solvent
- Odour threshold** : Not available.
- Melting point/freezing point** : Not available.
- Initial boiling point and boiling range** : Not available.
- Flammability (solid, gas)** : Not available.
- Upper/lower flammability or explosive limits** : Not available.
- Flash point** : Closed cup: >93.3°C (>199.9°F)
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- pH** : Not available.
- Viscosity** : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
Kinematic (40°C): >40 mm²/s
- Solubility in water** : Not available.
- Partition coefficient: n-octanol/water** : Not applicable.
- Vapour pressure** : Not available.
- Evaporation rate** : Not available.
- Relative density** : 1.11 to 1.13
- Vapour density** : Not available.
- Explosive properties** : Not available.
- Oxidising properties** : Not available.
- Particle characteristics**

Orthomodel Grey

SECTION 9: Physical and chemical properties

Median particle size : Not applicable.

Not available.

SECTION 10: Stability and reactivity

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

10.2 Chemical stability : The product is stable.

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

10.4 Conditions to avoid : No specific data.

10.5 Incompatible materials : No specific data.

10.6 Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Product/ingredient name

oxybis(methyl-2,1-ethanediyl) diacrylate

Result

Rat - Oral - LD50

4600 mg/kg

Toxic effects: Behavioral - Somnolence (general depressed activity) Behavioral - Ataxia Gastrointestinal - Hypermotility, diarrhea

phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

Rat - Oral - LD50

2000 mg/kg

OECD [Acute Oral Toxicity]

Rat - Dermal - LD50

2000 mg/kg

OECD [Acute Dermal Toxicity]

2-Propenoic acid, 1,1'-[(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)]] ester, reaction products with diethylamine

Rat - Oral - LD50

>2000 mg/kg

Rat - Dermal - LD50

>2000 mg/kg

titanium dioxide

Rat - Oral - LD50

>5000 mg/kg

Rat - Inhalation - LC50 Dusts and mists

>6.8 mg/l [4 hours]

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate

Rat - Oral - LD50

4890 mg/kg

Toxic effects: Behavioral - Tremor Lung, Thorax, or Respiration - Dyspnea Other - Hair

Rabbit - Dermal - LD50

>5 g/kg

Orthomodel Grey

SECTION 11: Toxicological information

2,6-di-tert-butyl-p-cresol **Rat - Oral - LD50**
890 mg/kg

Carbon black **Rat - Oral - LD50**
≥8000 mg/kg

Conclusion/Summary [Product] : Not available.

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
Orthomodel Grey	1335.7	102854.3	N/A	N/A	N/A
4-(1-oxo-2-propenyl)-morpholine	500	N/A	N/A	N/A	N/A
oxybis(methyl-2,1-ethanediyl) diacrylate	4600	N/A	N/A	N/A	N/A
phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide	2000	2000	N/A	N/A	N/A
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	4890	N/A	N/A	N/A	N/A

Skin corrosion/irritation

Product/ingredient name

oxybis(methyl-2,1-ethanediyl) diacrylate

Result

Rabbit - Skin - Severe irritant

Amount/concentration applied: 500 mg

dibutyltin dilaurate

Rabbit - Skin - Severe irritant

Amount/concentration applied: 500 mg

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate

Rabbit - Skin - Moderate irritant

Amount/concentration applied: 500 uL

2,6-di-tert-butyl-p-cresol

Human - Skin - Mild irritant

Duration of treatment/exposure: 48 hours

Amount/concentration applied: 500 mg

Rabbit - Skin - Moderate irritant

Duration of treatment/exposure: 48 hours

Amount/concentration applied: 500 mg

Conclusion/Summary [Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name

oxybis(methyl-2,1-ethanediyl) diacrylate

Result

Rabbit - Eyes - Severe irritant

Amount/concentration applied: 100 mg

dibutyltin dilaurate

Rabbit - Eyes - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 100 mg

exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate

Rabbit - Eyes - Mild irritant

Amount/concentration applied: 100 uL

2,6-di-tert-butyl-p-cresol

Rabbit - Eyes - Moderate irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 100 mg

Conclusion/Summary [Product] : Not available.

Orthomodel Grey

SECTION 11: Toxicological information

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name

phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

Result

Guinea pig - skin
OECD [Skin Sensitization]
Result: Sensitising

Skin

Conclusion/Summary [Product] : Not available.

Respiratory

Conclusion/Summary [Product] : Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] : Not available.

Carcinogenicity

Not available.

Conclusion/Summary [Product] : Not available.

Reproductive toxicity

Not available.

Conclusion/Summary [Product] : Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Product/ingredient name

4-(1-oxo-2-propenyl)-morpholine
dibutyltin dilaurate

Result

STOT RE 2, H373 (oral)
STOT RE 1, H372 (immune system)

Aspiration hazard

Not available.

Information on likely routes of exposure

Not available.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed.

Orthomodel Grey

SECTION 11: Toxicological information

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
 pain
 watering
 redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
 pain or irritation
 redness
 blistering may occur
- Ingestion** : Adverse symptoms may include the following:
 stomach pains

Delayed and immediate effects as well as 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/ingredient name

Carbon black

Result

Sub-chronic - Rat - Inhalation - NOAEL

1 mg/m³ [90 days]

Toxic effects: inflammation, hyperplasia, fibrosis

Conclusion/Summary [Product] : Not available.

- General** : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.

Other information

Not available.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name

2-Propenoic acid, 1,1'-[(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)]] ester, reaction products with diethylamine

Result

EC50

Algae - *Desmodesmus subspicatus*
 >100 mg/l [72 hours]

LC50

Fish - *Danio rerio*
 >100 mg/l [96 hours]

EC50

Crustaceans - *Daphnia magna*
 >100 mg/l [48 hours]

titanium dioxide

Acute - LC50

Fish - *Pimephales promelas*

Orthomodel Grey

SECTION 12: Ecological information

>1000 mg/l [96 hours]

Acute - LC50 - Fresh water

Crustaceans - Water flea - *Ceriodaphnia dubia* - Neonate

Age: <24 hours

15.9 mg/l [48 hours]

Effect: Mortality

dibutyltin dilaurate

Chronic - EC10 - Fresh water

Algae - Green algae - *Desmodesmus subspicatus*

>2 mg/l [96 hours]

Effect: Histology

2,6-di-tert-butyl-p-cresol

Chronic - NOEC - Fresh water

OECD

Algae - Green algae - *Raphidocelis subcapitata*

1 mg/l [72 hours]

Effect: Population

Acute - EC50 - Fresh water

OECD

Daphnia - Water flea - *Daphnia magna*

0.84 mg/l [48 hours]

Effect: Intoxication

Chronic - NOEC - Fresh water

OECD

Daphnia - Water flea - *Daphnia magna*

0.069 mg/l [21 days]

Effect: Reproduction

Acute - LC50 - Fresh water

OECD

Fish - Medaka, high-eyes - *Oryzias latipes*

1.1 mg/l [96 hours]

Effect: Mortality

Carbon black

LC50

OECD 203

Fish - *Brachydanio rerio*

>1000 mg/l [96 hours]

EC50

Algae - *Scenedesmus subspicatus*

>10000 mg/l [72 hours]

NOEC

Algae - *Scenedesmus subspicatus*

≥10000 mg/l [72 hours]

Conclusion/Summary [Product] : Not available.

12.2 Persistence and degradability

Product/ingredient name

phenyl bis(2,4,6-trimethylbenzoyl)-phosphine oxide

Result

OECD [Ready Biodegradability - CO2 Evolution Test]
1% [29 days]

Conclusion/Summary [Product] : Not available.

Orthomodel Grey

SECTION 12: Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
phenyl bis (2,4,6-trimethylbenzoyl)-phosphine oxide	-	-	Not readily

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
4-(1-oxo-2-propenyl)-morpholine	-0.46	-	Low
oxybis(methyl-2,1-ethanediyl) diacrylate	0.01 to 0.39	-	Low
phenyl bis (2,4,6-trimethylbenzoyl)-phosphine oxide	5.77	<5	Low
dibutyltin dilaurate	4.44	2.91 [OECD 305]	Low
2,6-di-tert-butyl-p-cresol	5.1	330 to 1800 [OECD 305 C]	High

12.4 Mobility in soil

Soil/water partition coefficient : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
4-(1-oxo-2-propenyl)-morpholine	N/A	N/A	N/A	Yes	N/A	N/A	N/A
oxybis(methyl-2,1-ethanediyl) diacrylate	No	N/A	N/A	No	N/A	N/A	N/A
phenyl bis (2,4,6-trimethylbenzoyl)-phosphine oxide	No	N/A	No	No	No	N/A	No
2-Propenoic acid, 1,1'-[(1-methyl-1,2-ethanediyl)bis[oxy(methyl-2,1-ethanediyl)]] ester, reaction products with diethylamine	No	N/A	N/A	No	N/A	N/A	N/A
titanium dioxide	No	No	No	No	No	No	No
dibutyltin dilaurate	No	N/A	No	Yes	No	N/A	No
exo-1,7,7-trimethylbicyclo[2.2.1]hept-2-yl acrylate	No	N/A	N/A	No	N/A	N/A	N/A
2,6-di-tert-butyl-p-cresol	No	N/A	No	No	No	N/A	No
Carbon black	No	No	No	No	No	No	No

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

SECTION 13: Disposal considerations

The information in this section contains generic advice and guidance. The list of Identified Uses in Section 1 should be consulted for any available use-specific information provided in the Exposure Scenario(s).

13.1 Waste treatment methods**Product**

Orthomodel Grey

SECTION 13: Disposal considerations

- Methods of disposal** : The generation of waste should be avoided or minimised 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.
- Hazardous waste** : The classification of the product may meet the criteria for a hazardous waste.
- Packaging**
- Methods of disposal** : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.
- Special precautions** : 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

	ADR/RID	ADN	IMDG	IATA
14.1 UN number	Not regulated.	Not regulated.	Not regulated.	Not regulated.
14.2 UN proper shipping name	-	-	-	-
14.3 Transport hazard class(es)	-	-	-	-
14.4 Packing group	-	-	-	-
14.5 Environmental hazards	No.	No.	No.	No.

14.6 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.

14.7 Transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

Orthomodel Grey

SECTION 15: Regulatory information

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product/ingredient name	%	Designation [Usage]
Orthomodel Grey	≥90	3
toluene	≤0.1	48

Labelling : Not applicable.**Seveso Directive**

This product is not controlled under the Seveso Directive.

EU regulations**Industrial emissions (integrated pollution prevention and control) - Air** : Not listed**Industrial emissions (integrated pollution prevention and control) - Water** : Not listed**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.

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments are still required.**SECTION 16: Other information**

✔ Indicates information that has changed from previously issued version.

Abbreviations and acronyms

: ATE = Acute Toxicity Estimate
 GB CLP = UK CLP (EC No 1272/2008) on the Classification, Labelling and Packaging of Substances and Mixtures as amended by (EU Exit) Regulations 2019 No. 720 and amendments
 DMEL = Derived Minimal Effect Level
 DNEL = Derived No Effect Level
 EUH statement = GB CLP-specific Hazard statement
 N/A = Not available
 PBT = Persistent, Bioaccumulative and Toxic
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number
 SGG = Segregation Group
 vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

Orthomodel Grey

SECTION 16: Other information

Classification	Justification
Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT RE 2, H373	Calculation method Calculation method Calculation method Calculation method Calculation method

Full text of abbreviated H statements

H302	Harmful if swallowed.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H319	Causes serious eye irritation.
H341	Suspected of causing genetic defects.
H360	May damage fertility or the unborn child.
H372	Causes damage to organs through prolonged or repeated exposure.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H413	May cause long lasting harmful effects to aquatic life.

Full text of classifications

Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 4	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 4
Eye Dam. 1	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Muta. 2	GERM CELL MUTAGENICITY - Category 2
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
Skin Sens. 1B	SKIN SENSITISATION - Category 1B
STOT RE 1	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 1
STOT RE 2	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2

Date of printing : 15/07/2025
Date of issue/ Date of revision : 15/07/2025
Date of previous issue : No previous validation
Version : 0.01

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.