



VDW.ROTATE and RECIPROC® blue

VDW GmbH

Chemwatch: 5617-82
Version No: 2.1
Safety Data Sheet (Conforms to Annex II of REACH (1907/2006) - Regulation 2020/878)

Chemwatch Hazard Alert Code: 2

Issue Date: 26/07/2023
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S.REACH.DEU.EN.E

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

1.1. Product Identifier

| | |
|-------------------------------|--|
| Product name | VDW.ROTATE and RECIPROC® blue |
| Synonyms | Part No.: V040258*, M00VRGPF00*; Part No.: V040258*; M00VRGPF00* |
| Proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains zinc oxide) |
| Other means of identification | Not Available |

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

| | |
|--------------------------|--|
| Relevant identified uses | Use according to manufacturer's directions. |
| Uses advised against | No specific uses advised against are identified. |

1.3. Details of the manufacturer or supplier of the safety data sheet

| | |
|-------------------------|--|
| Registered company name | VDW GmbH |
| Address | Bayerwaldstrasse 15 Munich 81737 Germany |
| Telephone | +49 (0)89 627340 |
| Fax | +49 (0)89 62734-190 |
| Website | www.vdw-dental.com |
| Email | info@vdw-dental.com |

1.4. Emergency telephone number

| | | |
|-----------------------------------|--|-------------------------------------|
| Association / Organisation | Berliner Betrieb für Zentrale gesundheitliche Aufgaben, Institute for Toxicology, Clinical toxicology and Poison information Centre Berlin | CHEMWATCH EMERGENCY RESPONSE (24/7) |
| Emergency telephone numbers | +49-(0)30-19240 | +49 32 211121704 |
| Other emergency telephone numbers | Not Available | +61 3 9573 3188 |

Once connected and if the message is not in your preferred language then please dial 01

SECTION 2 Hazards identification

2.1. Classification of the substance or mixture

| | |
|---|--|
| Classification according to regulation (EC) No 1272/2008 [CLP] and amendments [1] | H317 - Sensitisation (Skin) Category 1, H400 - Hazardous to the Aquatic Environment Acute Hazard Category 1, H410 - Hazardous to the Aquatic Environment Long-Term Hazard Category 1 |
| Legend: | 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI |

2.2. Label elements

| | |
|---------------------|---------|
| Hazard pictogram(s) | |
| Signal word | Warning |

Hazard statement(s)

| | |
|------|---|
| H317 | May cause an allergic skin reaction. |
| H410 | Very toxic to aquatic life with long lasting effects. |

Supplementary statement(s)

Not Applicable

Precautionary statement(s) Prevention

| | |
|------|--|
| P280 | Wear protective gloves and protective clothing. |
| P261 | Avoid breathing dust/fumes. |
| P273 | Avoid release to the environment. |
| P272 | Contaminated work clothing should not be allowed out of the workplace. |

Precautionary statement(s) Response

| | |
|-----------|--|
| P302+P352 | IF ON SKIN: Wash with plenty of water and soap. |
| P333+P313 | If skin irritation or rash occurs: Get medical advice/attention. |
| P362+P364 | Take off contaminated clothing and wash it before reuse. |
| P391 | Collect spillage. |

Precautionary statement(s) Storage

Not Applicable

Precautionary statement(s) Disposal

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

2.3. Other hazards

Inhalation may produce health damage*.

Cumulative effects may result following exposure*.

May produce discomfort of the eyes, respiratory tract and skin*.

REACH - Art.57-59: The mixture does not contain Substances of Very High Concern (SVHC) at the SDS print date.

SECTION 3 Composition / information on ingredients**3.1. Substances**

See 'Composition on ingredients' in Section 3.2

3.2. Mixtures

| 1. CAS No 2. EC No 3. Index No 4. REACH No | %[weight] | Name | Classification according to regulation (EC) No 1272/2008 [CLP] and amendments | SCL / M-Factor | Nanoform Particle Characteristics |
|--|-----------|---------------------------------------|--|----------------|-----------------------------------|
| 1. 1314-13-2 2. 215-222-5 3. 030-013-00-7 4. Not Available | 45-55 | zinc oxide | Hazardous to the Aquatic Environment Acute Hazard Category 1, Hazardous to the Aquatic Environment Long-Term Hazard Category 1; H400, H410 [2] | Not Available | Not Available |
| 1. 9000-32-2 2. 232-537-3 3. Not Available 4. Not Available | 20-30 | trans-1,4-polyisoprene (Gutta-percha) | Not Classified [1] | Not Available | Not Available |

Legend: 1. Classified by Chemwatch; 2. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 3. Classification drawn from C&L; * EU IOELVs available; [e] Substance identified as having endocrine disrupting properties

SECTION 4 First aid measures**4.1. Description of first aid measures**

| | |
|---------------------|--|
| Eye Contact | <p>If this product comes in contact with the eyes:</p> <ul style="list-style-type: none"> ▶ Immediately hold eyelids apart and flush the eye continuously with running water. ▶ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids. ▶ Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes. ▶ Transport to hospital or doctor without delay. ▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| Skin Contact | <p>If skin or hair contact occurs:</p> <ul style="list-style-type: none"> ▶ Immediately flush body and clothes with large amounts of water, using safety shower if available. ▶ Quickly remove all contaminated clothing, including footwear. ▶ Wash skin and hair with running water. Continue flushing with water until advised to stop by the Poisons Information Centre. ▶ Transport to hospital, or doctor. |
| Inhalation | <ul style="list-style-type: none"> ▶ If fumes or combustion products are inhaled remove from contaminated area. ▶ Lay patient down. Keep warm and rested. ▶ Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures. |

| | |
|-----------|--|
| | <ul style="list-style-type: none"> ▶ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary. ▶ Transport to hospital, or doctor, without delay. |
| Ingestion | <ul style="list-style-type: none"> ▶ Give a slurry of activated charcoal in water to drink. NEVER GIVE AN UNCONSCIOUS PATIENT WATER TO DRINK. ▶ At least 3 tablespoons in a glass of water should be given. ▶ Although induction of vomiting may be recommended (IN CONSCIOUS PERSONS ONLY), such a first aid measure is dissuaded due to the risk of aspiration of stomach contents. (i) It is better to take the patient to a doctor who can decide on the necessity and method of emptying the stomach. (ii) Special circumstances may however exist; these include non-availability of charcoal and the ready availability of the doctor. <p>NOTE: If vomiting is induced, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.</p> <p>NOTE: Wear protective gloves when inducing vomiting.</p> <ul style="list-style-type: none"> ▶ REFER FOR MEDICAL ATTENTION WITHOUT DELAY. ▶ In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition. ▶ If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist. ▶ If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS. (ICSC20305/20307) |

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

Treat symptomatically.

- ▶ Absorption of zinc compounds occurs in the small intestine.
- ▶ The metal is heavily protein bound.
- ▶ Elimination results primarily from faecal excretion.
- ▶ The usual measures for decontamination (Ipecac Syrup, lavage, charcoal or cathartics) may be administered, although patients usually have sufficient vomiting not to require them.
- ▶ CaNa2EDTA has been used successfully to normalise zinc levels and is the agent of choice.

[Ellenhorn and Barceloux: Medical Toxicology]

SECTION 5 Firefighting measures

5.1. Extinguishing media

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

5.2. Special hazards arising from the substrate or mixture

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

5.3. Advice for firefighters

| | |
|-----------------------|--|
| Fire Fighting | <ul style="list-style-type: none"> ▶ Alert Fire Brigade and tell them location and nature of hazard. ▶ Wear breathing apparatus plus protective gloves in the event of a fire. ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ Use fire fighting procedures suitable for surrounding area. ▶ DO NOT approach containers suspected to be hot. ▶ Cool fire exposed containers with water spray from a protected location. ▶ If safe to do so, remove containers from path of fire. ▶ Equipment should be thoroughly decontaminated after use. |
| Fire/Explosion Hazard | <ul style="list-style-type: none"> ▶ Solid which exhibits difficult combustion or is difficult to ignite. ▶ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. ▶ Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited; once initiated larger particles up to 1400 microns diameter will contribute to the propagation of an explosion. ▶ A dust explosion may release large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people. ▶ Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this type. ▶ Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport. ▶ Build-up of electrostatic charge may be prevented by bonding and grounding. ▶ Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting. ▶ All movable parts coming in contact with this material should have a speed of less than 1-metre/sec. <p>Combustion products include: carbon monoxide (CO) carbon dioxide (CO2) metal oxides other pyrolysis products typical of burning organic material.</p> |

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

See section 8

6.2. Environmental precautions

See section 12

6.3. Methods and material for containment and cleaning up

| | |
|---------------------|--|
| Minor Spills | <ul style="list-style-type: none"> ▶ Remove all ignition sources. ▶ Clean up all spills immediately. ▶ Avoid contact with skin and eyes. ▶ Control personal contact with the substance, by using protective equipment. ▶ Use dry clean up procedures and avoid generating dust. ▶ Place in a suitable, labelled container for waste disposal. <p>Environmental hazard - contain spillage.</p> |
| Major Spills | <p>Environmental hazard - contain spillage. Moderate hazard.</p> <ul style="list-style-type: none"> ▶ CAUTION: Advise personnel in area. ▶ Alert Emergency Services and tell them location and nature of hazard. ▶ Control personal contact by wearing protective clothing. ▶ Prevent, by any means available, spillage from entering drains or water courses. ▶ Recover product wherever possible. ▶ IF DRY: Use dry clean up procedures and avoid generating dust. Collect residues and place in sealed plastic bags or other containers for disposal. IF WET: Vacuum/shovel up and place in labelled containers for disposal. ▶ ALWAYS: Wash area down with large amounts of water and prevent runoff into drains. ▶ If contamination of drains or waterways occurs, advise Emergency Services. |

6.4. Reference to other sections

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

SECTION 7 Handling and storage

7.1. Precautions for safe handling

| | |
|--------------------------------------|--|
| Safe handling | <ul style="list-style-type: none"> ▶ Avoid all personal contact, including inhalation. ▶ Wear protective clothing when risk of exposure occurs. ▶ Use in a well-ventilated area. ▶ Prevent concentration in hollows and sumps. ▶ DO NOT enter confined spaces until atmosphere has been checked. ▶ DO NOT allow material to contact humans, exposed food or food utensils. ▶ Avoid contact with incompatible materials. ▶ When handling, DO NOT eat, drink or smoke. ▶ Keep containers securely sealed when not in use. ▶ Avoid physical damage to containers. ▶ Always wash hands with soap and water after handling. ▶ Work clothes should be laundered separately. Launder contaminated clothing before re-use. ▶ Use good occupational work practice. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. ▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained. ▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions) ▶ Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame. ▶ Establish good housekeeping practices. ▶ Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds. ▶ Use continuous suction at points of dust generation to capture and minimise the accumulation of dusts. Particular attention should be given to overhead and hidden horizontal surfaces to minimise the probability of a "secondary" explosion. According to NFPA Standard 654, dust layers 1/32 in.(0.8 mm) thick can be sufficient to warrant immediate cleaning of the area. ▶ Do not use air hoses for cleaning. ▶ Minimise dry sweeping to avoid generation of dust clouds. Vacuum dust-accumulating surfaces and remove to a chemical disposal area. Vacuums with explosion-proof motors should be used. ▶ Control sources of static electricity. Dusts or their packages may accumulate static charges, and static discharge can be a source of ignition. ▶ Solids handling systems must be designed in accordance with applicable standards (e.g. NFPA including 654 and 77) and other national guidance. ▶ Do not empty directly into flammable solvents or in the presence of flammable vapors. ▶ The operator, the packaging container and all equipment must be grounded with electrical bonding and grounding systems. Plastic bags and plastics cannot be grounded, and antistatic bags do not completely protect against development of static charges. <p>Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.</p> <ul style="list-style-type: none"> ▶ Do NOT cut, drill, grind or weld such containers. ▶ In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit. |
| Fire and explosion protection | See section 5 |
| Other information | <ul style="list-style-type: none"> ▶ Store in original containers. ▶ Keep containers securely sealed. ▶ Store in a cool, dry area protected from environmental extremes. ▶ Store away from incompatible materials and foodstuff containers. ▶ Protect containers against physical damage and check regularly for leaks. ▶ Observe manufacturer's storage and handling recommendations contained within this SDS. <p>For major quantities:</p> <ul style="list-style-type: none"> ▶ Consider storage in bunded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams). ▶ Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities. |

7.2. Conditions for safe storage, including any incompatibilities

| | |
|---------------------------|--|
| Suitable container | ▶ Polyethylene or polypropylene container. |
|---------------------------|--|

| | |
|--|--|
| | <ul style="list-style-type: none"> ▶ Check all containers are clearly labelled and free from leaks. |
| Storage incompatibility | <ul style="list-style-type: none"> ▶ Avoid strong acids, bases. ▶ Avoid reaction with oxidising agents |
| Hazard categories in accordance with Regulation (EC) No 1272/2008 | E1: Hazardous to the Aquatic Environment in Category Acute 1 or Chronic 1 |
| Qualifying quantity (tonnes) of dangerous substances as referred to in Article 3(10) for the application of | E1 Lower- / Upper-tier requirements: 100 / 200 |

7.3. Specific end use(s)

See section 1.2

SECTION 8 Exposure controls / personal protection

8.1. Control parameters

| Ingredient | DNELs Exposure Pattern Worker | PNECs Compartment |
|------------|---|---|
| zinc oxide | Dermal 83 mg/kg bw/day (Systemic, Chronic) Inhalation 2 mg/m ³ (Systemic, Chronic) Inhalation 4 µg/m ³ (Local, Chronic) Inhalation 2 mg/m ³ (Systemic, Acute) Dermal 83 mg/kg bw/day (Systemic, Chronic) * Inhalation 1 mg/m ³ (Systemic, Chronic) * Oral 0.83 mg/kg bw/day (Systemic, Chronic) * Inhalation 1 mg/m ³ (Systemic, Acute) * | 0.19 µg/L (Water (Fresh)) 1.2 µg/L (Water - Intermittent release) 1.14 µg/L (Water (Marine)) 18 mg/kg sediment dw (Sediment (Fresh Water)) 6.4 mg/kg sediment dw (Sediment (Marine)) 0.7 mg/kg soil dw (Soil) 20 µg/L (STP) 0.16 mg/kg food (Oral) |

* Values for General Population

Occupational Exposure Limits (OEL)

INGREDIENT DATA


| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---------------------------------------|--|------------------------|------------------------|---------------|---|
| Germany Recommended Exposure Limits - MAK Values | zinc oxide | Zinc and its inorganic compounds (respirable fraction) | 0.1 mg/m ³ | 0.4 mg/m ³ | Not Available | Preg gr: C; Classification in Pregnancy Risk Group C was re-evaluated in 2011 and confirmed. |
| Germany Recommended Exposure Limits - MAK Values | zinc oxide | Zinc and its inorganic compounds (inhalable fraction) | 2 mg/m ³ | 4; 2 mg/m ³ | Not Available | Preg gr: C; Classification in Pregnancy Risk Group C was re-evaluated in 2011 and confirmed. |
| Germany Recommended Exposure Limits - MAK Values | zinc oxide | Dust, general limit value (inhalable fraction) | 4 mg/m ³ | Not Available | Not Available | see section Vf and g |
| Germany Recommended Exposure Limits - MAK Values | zinc oxide | Dust, general limit value (respirable fraction) (biopersistent granular dusts) | 0.3 mg/m ³ | 2.4 mg/m ³ | Not Available | except for ultrafine particles; see section Vh; see section Vf; for dusts with a density of 1 g/cm ³ ; Preg gr: C; Carc cat: 4 |
| Germany TRGS 900 - Limit Values for the Workplace Atmosphere (German) | zinc oxide | Allgemeiner Staubgrenzwert (siehe auch Nummer 2.4) Einatembare Fraktion | 10 mg/m ³ | Not Available | Not Available | Not Available |
| Germany TRGS 900 - Limit Values for the Workplace Atmosphere (German) | zinc oxide | Allgemeiner Staubgrenzwert (siehe auch Nummer 2.4) Alveolengängige Fraktion | 1.25 mg/m ³ | Not Available | Not Available | Not Available |
| Germany Recommended Exposure Limits - MAK Values | trans-1,4-polyisoprene (Gutta-percha) | Dust, general limit value (inhalable fraction) | 4 mg/m ³ | Not Available | Not Available | see section Vf and g |
| Germany Recommended Exposure Limits - MAK Values | trans-1,4-polyisoprene (Gutta-percha) | Dust, general limit value (respirable fraction) (biopersistent granular dusts) | 0.3 mg/m ³ | 2.4 mg/m ³ | Not Available | except for ultrafine particles; see section Vh; see section Vf; for dusts with a density of 1 g/cm ³ ; Preg gr: C; Carc cat: 4 |
| Germany TRGS 900 - Limit Values for the Workplace Atmosphere (German) | trans-1,4-polyisoprene (Gutta-percha) | Allgemeiner Staubgrenzwert (siehe auch Nummer 2.4) Einatembare Fraktion | 10 mg/m ³ | Not Available | Not Available | Not Available |
| Germany TRGS 900 - Limit Values for the Workplace Atmosphere (German) | trans-1,4-polyisoprene (Gutta-percha) | Allgemeiner Staubgrenzwert (siehe auch Nummer 2.4) Alveolengängige Fraktion | 1.25 mg/m ³ | Not Available | Not Available | Not Available |

Emergency Limits

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|------------|----------------------|----------------------|-------------------------|
| zinc oxide | 10 mg/m ³ | 15 mg/m ³ | 2,500 mg/m ³ |

| Ingredient | Original IDLH | Revised IDLH |
|---------------------------------------|-----------------------|---------------|
| zinc oxide | 500 mg/m ³ | Not Available |
| trans-1,4-polyisoprene (Gutta-percha) | Not Available | Not Available |

8.2. Exposure controls

| <p>8.2.1. Appropriate engineering controls</p> | <p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. An approved self contained breathing apparatus (SCBA) may be required in some situations.</p> <p>Provide adequate ventilation in warehouse or closed storage area. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> <table border="1" data-bbox="384 555 1489 808"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <tr> <td>solvent, vapours, degreasing etc., evaporating from tank (in still air).</td> <td>0.25-0.5 m/s (50-100 f/min.)</td> </tr> <tr> <td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td> <td>0.5-1 m/s (100-200 f/min.)</td> </tr> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min.)</td> </tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td> <td>2.5-10 m/s (500-2000 f/min.)</td> </tr> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1" data-bbox="384 846 1118 1010"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </tbody> </table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p> | Type of Contaminant: | Air Speed: | solvent, vapours, degreasing etc., evaporating from tank (in still air). | 0.25-0.5 m/s (50-100 f/min.) | aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.) | direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min.) | grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5-10 m/s (500-2000 f/min.) | Lower end of the range | Upper end of the range | 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents | 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity | 3: Intermittent, low production. | 3: High production, heavy use | 4: Large hood or large air mass in motion | 4: Small hood-local control only |
|---|---|----------------------|------------|--|------------------------------|---|----------------------------|--|----------------------------|--|------------------------------|------------------------|------------------------|---|---------------------------------|--|----------------------------------|----------------------------------|-------------------------------|---|----------------------------------|
| Type of Contaminant: | Air Speed: | | | | | | | | | | | | | | | | | | | | |
| solvent, vapours, degreasing etc., evaporating from tank (in still air). | 0.25-0.5 m/s (50-100 f/min.) | | | | | | | | | | | | | | | | | | | | |
| aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation) | 0.5-1 m/s (100-200 f/min.) | | | | | | | | | | | | | | | | | | | | |
| direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion) | 1-2.5 m/s (200-500 f/min.) | | | | | | | | | | | | | | | | | | | | |
| grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion). | 2.5-10 m/s (500-2000 f/min.) | | | | | | | | | | | | | | | | | | | | |
| Lower end of the range | Upper end of the range | | | | | | | | | | | | | | | | | | | | |
| 1: Room air currents minimal or favourable to capture | 1: Disturbing room air currents | | | | | | | | | | | | | | | | | | | | |
| 2: Contaminants of low toxicity or of nuisance value only. | 2: Contaminants of high toxicity | | | | | | | | | | | | | | | | | | | | |
| 3: Intermittent, low production. | 3: High production, heavy use | | | | | | | | | | | | | | | | | | | | |
| 4: Large hood or large air mass in motion | 4: Small hood-local control only | | | | | | | | | | | | | | | | | | | | |
| <p>8.2.2. Individual protection measures, such as personal protective equipment</p> |  | | | | | | | | | | | | | | | | | | | | |
| <p>Eye and face protection</p> | <ul style="list-style-type: none"> ▶ Safety glasses with unperforated side shields may be used where continuous eye protection is desirable, as in laboratories; spectacles are not sufficient where complete eye protection is needed such as when handling bulk-quantities, where there is a danger of splashing, or if the material may be under pressure. ▶ Chemical goggles. Whenever there is a danger of the material coming in contact with the eyes; goggles must be properly fitted. [AS/NZS 1337.1, EN166 or national equivalent] ▶ Full face shield (20 cm, 8 in minimum) may be required for supplementary but never for primary protection of eyes; these afford face protection. ▶ Alternatively a gas mask may replace splash goggles and face shields. ▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59]. | | | | | | | | | | | | | | | | | | | | |
| <p>Skin protection</p> | <p>See Hand protection below</p> | | | | | | | | | | | | | | | | | | | | |
| <p>Hands/feet protection</p> | <ul style="list-style-type: none"> ▶ Elbow length PVC gloves <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> · frequency and duration of contact, · chemical resistance of glove material, · glove thickness and · dexterity <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> · When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended. · Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use. · Contaminated gloves should be replaced. <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> · Excellent when breakthrough time > 480 min | | | | | | | | | | | | | | | | | | | | |

| | |
|-------------------------|---|
| | <ul style="list-style-type: none"> · Good when breakthrough time > 20 min · Fair when breakthrough time < 20 min · Poor when glove material degrades <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>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.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> · Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of. · 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 <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> ▶ polychloroprene. ▶ nitrile rubber. ▶ butyl rubber. ▶ fluorocautchouc. ▶ polyvinyl chloride. <p>Gloves should be examined for wear and/ or degradation constantly.</p> |
| Body protection | See Other protection below |
| Other protection | <ul style="list-style-type: none"> ▶ Overalls. ▶ P.V.C apron. ▶ Barrier cream. ▶ Skin cleansing cream. ▶ Eye wash unit. |

Respiratory protection

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
 - The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
 - Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
 - Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
 - Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
 - Use approved positive flow mask if significant quantities of dust becomes airborne.
 - Try to avoid creating dust conditions.
- Class P2 particulate filters are used for protection against mechanically and thermally generated particulates or both. P2 is a respiratory filter rating under various international standards, Filters at least 94% of airborne particles
- Suitable for:
- Relatively small particles generated by mechanical processes eg. grinding, cutting, sanding, drilling, sawing.
 - Sub-micron thermally generated particles e.g. welding fumes, fertilizer and bushfire smoke.
 - Biologically active airborne particles under specified infection control applications e.g. viruses, bacteria, COVID-19, SARS

8.2.3. Environmental exposure controls

See section 12

SECTION 9 Physical and chemical properties

9.1. Information on basic physical and chemical properties

| | | | |
|---|---|--|----------------|
| Appearance | Pink cylindrical shape solid; insoluble in water. | | |
| Physical state | Manufactured | Relative density (Water = 1) | Not Available |
| Odour | Not Available | Partition coefficient n-octanol / water | Not Available |
| Odour threshold | Not Available | Auto-ignition temperature (°C) | Not Applicable |
| pH (as supplied) | Not Applicable | Decomposition temperature (°C) | Not Available |
| Melting point / freezing point (°C) | Not Available | Viscosity (cSt) | Not Applicable |
| Initial boiling point and boiling range (°C) | Not Available | Molecular weight (g/mol) | Not Applicable |
| Flash point (°C) | Not Applicable | Taste | Not Available |
| Evaporation rate | Not Available | Explosive properties | Not Available |
| Flammability | Not Applicable | Oxidising properties | Not Available |
| Upper Explosive Limit (%) | Not Applicable | Surface Tension (dyn/cm or mN/m) | Not Applicable |

| | | | |
|----------------------------------|----------------|--|----------------|
| Lower Explosive Limit (%) | Not Applicable | Volatile Component (%vol) | Not Available |
| Vapour pressure (kPa) | Not Applicable | Gas group | Not Available |
| Solubility in water | Immiscible | pH as a solution (1%) | Not Applicable |
| Vapour density (Air = 1) | Not Available | VOC g/L | Not Available |
| Nanoform Solubility | Not Available | Nanoform Particle Characteristics | Not Available |
| Particle Size | Not Available | | |

9.2. Other information

Not Available

SECTION 10 Stability and reactivity

| | |
|---|--|
| 10.1.Reactivity | See section 7.2 |
| 10.2. Chemical stability | <ul style="list-style-type: none"> ▶ Unstable in the presence of incompatible materials. ▶ Product is considered stable. ▶ Hazardous polymerisation will not occur. |
| 10.3. Possibility of hazardous reactions | See section 7.2 |
| 10.4. Conditions to avoid | See section 7.2 |
| 10.5. Incompatible materials | See section 7.2 |
| 10.6. Hazardous decomposition products | See section 5.3 |

SECTION 11 Toxicological information**11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008**

| | |
|---------------------|---|
| Inhaled | <p>There is some evidence to suggest that the material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage.</p> <p>Inhalation of vapours or aerosols (mists, fumes), generated by the material during the course of normal handling, may be damaging to the health of the individual.</p> <p>Effects on lungs are significantly enhanced in the presence of respirable particles.</p> |
| Ingestion | Soluble zinc salts produce irritation and corrosion of the alimentary tract with pain, and vomiting. Death can occur due to insufficiency of food intake due to severe narrowing of the oesophagus and pylorus. |
| Skin Contact | <p>There is some evidence to suggest that the material may cause mild but significant inflammation of the skin either following direct contact or after a delay of some time. Repeated exposure can cause contact dermatitis which is characterised by redness, swelling and blistering.</p> <p>Open cuts, abraded or irritated skin should not be exposed to this material</p> <p>Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.</p> <p>Repeated or excessive handling, coupled with poor personal hygiene, may result in acne-like eruptions known as "zinc oxide pox".</p> |
| Eye | There is some evidence to suggest that this material can cause eye irritation and damage in some persons. |
| Chronic | <p>Welding or flame cutting of metals with zinc or zinc dust coatings may result in inhalation of zinc oxide fume; high concentrations of zinc oxide fume may result in "metal fume fever"; also known as "brass chills", an industrial disease of short duration. [I.L.O] Symptoms include malaise, fever, weakness, nausea and may appear quickly if operations occur in enclosed or poorly ventilated areas.</p> <p>Overexposure to the breathable dust may cause coughing, wheezing, difficulty in breathing and impaired lung function. Chronic symptoms may include decreased vital lung capacity and chest infections. Repeated exposures in the workplace to high levels of fine-divided dusts may produce a condition known as pneumoconiosis, which is the lodgement of any inhaled dusts in the lung, irrespective of the effect. This is particularly true when a significant number of particles less than 0.5 microns (1/50000 inch) are present. Lung shadows are seen in the X-ray. Symptoms of pneumoconiosis may include a progressive dry cough, shortness of breath on exertion, increased chest expansion, weakness and weight loss. As the disease progresses, the cough produces stringy phlegm, vital capacity decreases further, and shortness of breath becomes more severe. Other signs or symptoms include changed breath sounds, reduced oxygen uptake during exercise, emphysema and rarely, pneumothorax (air in the lung cavity).</p> <p>Removing workers from the possibility of further exposure to dust generally stops the progress of lung abnormalities. When there is high potential for worker exposure, examinations at regular period with emphasis on lung function should be performed.</p> <p>Inhaling dust over an extended number of years may cause pneumoconiosis, which is the accumulation of dusts in the lungs and the subsequent tissue reaction. This may or may not be reversible.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> |

| | | |
|--------------------------------------|---|--|
| VDW.ROTATE and RECIPROC® blue | TOXICITY | IRRITATION |
| | Not Available | Not Available |
| zinc oxide | TOXICITY | IRRITATION |
| | dermal (rat) LD50: >2000 mg/kg ^[1] | Eye (rabbit) : 500 mg/24 h - mild |
| | Inhalation(Rat) LC50: >1.79 mg/l4h ^[1] | Eye: no adverse effect observed (not irritating) ^[1] |
| | Oral (Rat) LD50: >5000 mg/kg ^[1] | Skin (rabbit) : 500 mg/24 h- mild |
| | | Skin: no adverse effect observed (not irritating) ^[1] |

| | | |
|---------------------------------------|-----------------|-------------------|
| trans-1,4-polyisoprene (Gutta-percha) | TOXICITY | IRRITATION |
| | Not Available | Not Available |

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

| | |
|---|--|
| VDW.ROTATE and RECIPROC® blue & TRANS-1,4-POLYISOPRENE (GUTTA-PERCHA) | No significant acute toxicological data identified in literature search. |
| VDW.ROTATE and RECIPROC® blue & ZINC OXIDE | The material may cause skin irritation after prolonged or repeated exposure and may produce on contact skin redness, swelling, the production of vesicles, scaling and thickening of the skin. |

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

Legend: ✗ – Data either not available or does not fill the criteria for classification
 ✓ – Data available to make classification

11.2 Information on other hazards

11.2.1. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.

11.2.2. Other information

See Section 11.1

SECTION 12 Ecological information

12.1. Toxicity

| VDW.ROTATE and RECIPROC® blue | Endpoint | Test Duration (hr) | Species | Value | Source |
|---------------------------------------|---------------|--------------------|-------------------------------|---------------|---------------|
| | | Not Available | Not Available | Not Available | Not Available |
| zinc oxide | Endpoint | Test Duration (hr) | Species | Value | Source |
| | BCF | 1344h | Fish | 19-110 | 7 |
| | EC50 | 72h | Algae or other aquatic plants | 0.022mg/L | 2 |
| | EC50 | 48h | Crustacea | 0.105mg/L | 2 |
| | EC50 | 96h | Algae or other aquatic plants | 0.042mg/L | 2 |
| | ErC50 | 72h | Algae or other aquatic plants | 0.62mg/l | 2 |
| | LC50 | 96h | Fish | 0.102mg/L | 2 |
| | EC10(ECx) | 168h | Algae or other aquatic plants | 0.003mg/L | 2 |
| trans-1,4-polyisoprene (Gutta-percha) | Endpoint | Test Duration (hr) | Species | Value | Source |
| | Not Available | Not Available | Not Available | Not Available | Not Available |

Legend: 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

DO NOT discharge into sewer or waterways.

12.2. Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|------------|---------------------------------------|---------------------------------------|
| | No Data available for all ingredients | No Data available for all ingredients |

12.3. Bioaccumulative potential

| Ingredient | Bioaccumulation |
|------------|-----------------|
| zinc oxide | LOW (BCF = 217) |

12.4. Mobility in soil

| Ingredient | Mobility |
|------------|---------------------------------------|
| | No Data available for all ingredients |

12.5. Results of PBT and vPvB assessment

| | P | B | T |
|-------------------------|---------------|---------------|---------------|
| Relevant available data | Not Available | Not Available | Not Available |
| PBT | ✘ | ✘ | ✘ |
| vPvB | ✘ | ✘ | ✘ |
| PBT Criteria fulfilled? | No | | |
| vPvB | No | | |

12.6. Endocrine disrupting properties

No evidence of endocrine disrupting properties were found in the current literature.



12.7. Other adverse effects

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

SECTION 13 Disposal considerations**13.1. Waste treatment methods**

| | |
|------------------------------|--|
| Product / Packaging disposal | <ul style="list-style-type: none"> ▶ DO NOT allow wash water from cleaning or process equipment to enter drains. ▶ It may be necessary to collect all wash water for treatment before disposal. ▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first. ▶ Where in doubt contact the responsible authority. |
| Waste treatment options | Not Available |
| Sewage disposal options | Not Available |

SECTION 14 Transport information**Labels Required**

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

Land transport (ADR-RID)

| | | | | | | | | | | | | | |
|------------------------------------|---|--------------------------------|----|---------------------|----------------|--------------|---|--------------------|-----------------|------------------|------|-------------------------|----------------|
| 14.1. UN number or ID number | 3077 | | | | | | | | | | | | |
| 14.2. UN proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains zinc oxide) | | | | | | | | | | | | |
| 14.3. Transport hazard class(es) | <table border="1"> <tr> <td>Class</td> <td>9</td> </tr> <tr> <td>Subsidiary Hazard</td> <td>Not Applicable</td> </tr> </table> | Class | 9 | Subsidiary Hazard | Not Applicable | | | | | | | | |
| Class | 9 | | | | | | | | | | | | |
| Subsidiary Hazard | Not Applicable | | | | | | | | | | | | |
| 14.4. Packing group | III | | | | | | | | | | | | |
| 14.5. Environmental hazard | Environmentally hazardous | | | | | | | | | | | | |
| 14.6. Special precautions for user | <table border="1"> <tr> <td>Hazard identification (Kemler)</td> <td>90</td> </tr> <tr> <td>Classification code</td> <td>M7</td> </tr> <tr> <td>Hazard Label</td> <td>9</td> </tr> <tr> <td>Special provisions</td> <td>274 335 375 601</td> </tr> <tr> <td>Limited quantity</td> <td>5 kg</td> </tr> <tr> <td>Tunnel Restriction Code</td> <td>Not Applicable</td> </tr> </table> | Hazard identification (Kemler) | 90 | Classification code | M7 | Hazard Label | 9 | Special provisions | 274 335 375 601 | Limited quantity | 5 kg | Tunnel Restriction Code | Not Applicable |
| Hazard identification (Kemler) | 90 | | | | | | | | | | | | |
| Classification code | M7 | | | | | | | | | | | | |
| Hazard Label | 9 | | | | | | | | | | | | |
| Special provisions | 274 335 375 601 | | | | | | | | | | | | |
| Limited quantity | 5 kg | | | | | | | | | | | | |
| Tunnel Restriction Code | Not Applicable | | | | | | | | | | | | |

Air transport (ICAO-IATA / DGR)

| | | | | | | | |
|----------------------------------|---|-----------------|---|-------------------------------|----------------|----------|----|
| 14.1. UN number | 3077 | | | | | | |
| 14.2. UN proper shipping name | Environmentally hazardous substance, solid, n.o.s. (contains zinc oxide) | | | | | | |
| 14.3. Transport hazard class(es) | <table border="1"> <tr> <td>ICAO/IATA Class</td> <td>9</td> </tr> <tr> <td>ICAO / IATA Subsidiary Hazard</td> <td>Not Applicable</td> </tr> <tr> <td>ERG Code</td> <td>9L</td> </tr> </table> | ICAO/IATA Class | 9 | ICAO / IATA Subsidiary Hazard | Not Applicable | ERG Code | 9L |
| ICAO/IATA Class | 9 | | | | | | |
| ICAO / IATA Subsidiary Hazard | Not Applicable | | | | | | |
| ERG Code | 9L | | | | | | |

| | | |
|------------------------------------|---|-------------------------|
| 14.4. Packing group | III | |
| 14.5. Environmental hazard | Environmentally hazardous | |
| 14.6. Special precautions for user | Special provisions | A97 A158 A179 A197 A215 |
| | Cargo Only Packing Instructions | 956 |
| | Cargo Only Maximum Qty / Pack | 400 kg |
| | Passenger and Cargo Packing Instructions | 956 |
| | Passenger and Cargo Maximum Qty / Pack | 400 kg |
| | Passenger and Cargo Limited Quantity Packing Instructions | Y956 |
| | Passenger and Cargo Limited Maximum Qty / Pack | 30 kg G |

Sea transport (IMDG-Code / GGVSee)

| | | |
|------------------------------------|--|---------------------|
| 14.1. UN number | 3077 | |
| 14.2. UN proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains zinc oxide) | |
| 14.3. Transport hazard class(es) | IMDG Class | 9 |
| | IMDG Subsidiary Hazard | Not Applicable |
| 14.4. Packing group | III | |
| 14.5. Environmental hazard | Marine Pollutant | |
| 14.6. Special precautions for user | EMS Number | F-A , S-F |
| | Special provisions | 274 335 966 967 969 |
| | Limited Quantities | 5 kg |

Inland waterways transport (ADN)

| | | |
|------------------------------------|--|--------------------|
| 14.1. UN number | 3077 | |
| 14.2. UN proper shipping name | ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains zinc oxide) | |
| 14.3. Transport hazard class(es) | 9 | Not Applicable |
| | | |
| 14.4. Packing group | III | |
| 14.5. Environmental hazard | Environmentally hazardous | |
| 14.6. Special precautions for user | Classification code | M7 |
| | Special provisions | 274; 335; 375; 601 |
| | Limited quantity | 5 kg |
| | Equipment required | PP, A*** |
| | Fire cones number | 0 |

14.7. Maritime transport in bulk according to IMO instruments**14.7.1. Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

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

| Product name | Group |
|---------------------------------------|---------------|
| zinc oxide | Not Available |
| trans-1,4-polyisoprene (Gutta-percha) | Not Available |

14.7.3. Transport in bulk in accordance with the IGC Code

| Product name | Ship Type |
|---------------------------------------|---------------|
| zinc oxide | Not Available |
| trans-1,4-polyisoprene (Gutta-percha) | Not Available |

SECTION 15 Regulatory information**15.1. Safety, health and environmental regulations / legislation specific for the substance or mixture**

zinc oxide is found on the following regulatory lists

EU European Chemicals Agency (ECHA) Community Rolling Action Plan (CoRAP) List of Substances
Europe EC Inventory

Continued...

European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
 European Union (EU) Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Substances and Mixtures - Annex VI
 Germany Classification of Substances Hazardous to Waters (WGK)
 Germany Recommended Exposure Limits - MAK Values
 Germany Recommended Exposure Limits - MAK Values - Carcinogens
 Germany Recommended Exposure Limits - MAK Values - Pregnancy Risk Group Classifications & Germ Cell Mutagens
 Germany TRGS 900 - Limit Values for the Workplace Atmosphere (German)
 International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

trans-1,4-polyisoprene (Gutta-percha) is found on the following regulatory lists

Europe EC Inventory
 European Union - European Inventory of Existing Commercial Chemical Substances (EINECS)
 Germany Recommended Exposure Limits - MAK Values
 Germany Recommended Exposure Limits - MAK Values - Carcinogens
 Germany Recommended Exposure Limits - MAK Values - Pregnancy Risk Group Classifications & Germ Cell Mutagens
 Germany TRGS 900 - Limit Values for the Workplace Atmosphere (German)
 International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)

Additional Regulatory Information

Not Applicable

This safety data sheet is in compliance with the following EU legislation and its adaptations - as far as applicable - : Directives 98/24/EC, - 92/85/EEC, - 94/33/EC, - 2008/98/EC, - 2010/75/EU; Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 as updated through ATPs.

Information according to 2012/18/EU (Seveso III):

| Seveso Category | E1 |
|-----------------|----|
| | |

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.3. Classification of Substances and Mixtures into Water Hazard Classes

Preparation is WGK 2

| Name | WGK | Score | Source |
|---------------------------------------|-------------------------|-------|-----------------|
| ZINC OXIDE | 2 | | From Regulation |
| TRANS-1,4-POLYISOPRENE (GUTTA-PERCHA) | non-hazardous to waters | 0 | Calculated |

National Inventory Status

| National Inventory | Status |
|--|---|
| Australia - AIIIC / Australia Non-Industrial Use | No (trans-1,4-polyisoprene (Gutta-percha)) |
| Canada - DSL | No (trans-1,4-polyisoprene (Gutta-percha)) |
| Canada - NDSL | No (trans-1,4-polyisoprene (Gutta-percha)) |
| China - IECSC | No (trans-1,4-polyisoprene (Gutta-percha)) |
| Europe - EINEC / ELINCS / NLP | Yes |
| Japan - ENCS | No (trans-1,4-polyisoprene (Gutta-percha)) |
| Korea - KECI | No (trans-1,4-polyisoprene (Gutta-percha)) |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | No (trans-1,4-polyisoprene (Gutta-percha)) |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | No (trans-1,4-polyisoprene (Gutta-percha)) |
| Vietnam - NCI | No (trans-1,4-polyisoprene (Gutta-percha)) |
| Russia - FBEPH | No (trans-1,4-polyisoprene (Gutta-percha)) |
| Legend: | Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration. |

SECTION 16 Other information

| | |
|---------------|------------|
| Revision Date | 26/07/2023 |
| Initial Date | 26/07/2023 |

Full text Risk and Hazard codes

| | |
|------|-----------------------------|
| H400 | Very toxic to aquatic life. |
|------|-----------------------------|

Other information

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

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or

Continued...

other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

For detailed advice on Personal Protective Equipment, refer to the following EU CEN Standards:

- EN 166 Personal eye-protection
- EN 340 Protective clothing
- EN 374 Protective gloves against chemicals and micro-organisms
- EN 13832 Footwear protecting against chemicals
- EN 133 Respiratory protective devices

Definitions and abbreviations

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

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

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]

| Classification according to regulation (EC) No 1272/2008 [CLP] and amendments | Classification Procedure |
|---|--------------------------|
| Sensitisation (Skin) Category 1, H317 | Expert judgement |
| Hazardous to the Aquatic Environment Acute Hazard Category 1, H400 | Calculation method |
| Hazardous to the Aquatic Environment Long-Term Hazard Category 1, H410 | Calculation method |

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Approval

| <u>Owner Role</u> | <u>Sign-off By</u> | <u>Sign-off Date</u> | |
|---|--------------------|----------------------|-----|
| 1000- R&D Project Manager ENDODONTICS R&D Project Manager | Selma Mefti | 07-May-2021 8:18 am | GMT |
| 1000- Product Compliance Manager ENDODONTICS Product Compliance Manager | Liana Amanda | 13-Apr-2021 3:51 pm | GMT |
| 1000- Site Quality Assurance Lead ENDODONTICS Site Quality Assurance Lead | Terri Stanton | 14-Apr-2021 1:33 pm | GMT |
| 1000- R&D Platform Lead ENDODONTICS R&D Platform Lead | Kevin Wilkinson | 11-May-2021 8:36 pm | GMT |
| 1000- Clinical Research SBU Manager ENDODONTICS Clinical Research SBU Manager | Kitty Formentin | 07-May-2021 8:23 am | GMT |
| 1000- Regulatory Affairs SBU Manager ENDODONTICS Regulatory Affairs SBU Manager | Robert Meissner | 12-May-2021 6:11 am | GMT |

All products supplied by Xamax Industries Inc. are considered articles by OSHA Hazard Communication Standard 1910.1200 and as such no SDS is required. This information is voluntary and not subject to regulatory requirements.

1. Identification of the Substance/Mixture and of the Company/Undertaking

Product Identifier: Manning 210
Description: Absorbent Paper Point Paper
Intended Use: High strength paper used in industrial or hygienic applications.
Supplier: Xamax Industries, Inc. Phone: 001-203-888-7200 / 001-888-926-2988
 63 Silvermine Road Email: qualitydept@xamax.com
 Seymour, CT 06483

2. Hazards Identification

Hazard Statements:

- H335: May cause respiratory irritation.
 If this material is used in a manner that could generate dust particles, it should be treated as a nuisance particulate.

Precautionary Statements:

Possible Routes of Exposure:

- Eye Contact:** Only if dust is created from processing.
- Inhalation:** Only if dust is created from processing.
- Ingestion:** Unlikely, but generally considered non-toxic.
- Skin:** Not an irritant, no adverse effect.

Carcinogen: No **NTP:** No **IARC** No **OSHA Regulated** No

Acute Health Effects: None Known
Chronic Health Effects: None known
Symptoms of Exposure: None known
HMIS Rating: Health : 0, Flammability : 1, Reactivity : 0

3. Composition/ Information on Ingredients

| No. | Component | CAS # | Weight % |
|-----|----------------|-----------|----------|
| 1. | Cellulose Pulp | 9004-34-6 | > 92 |
| 2. | Lignin | 9005-53-2 | < 8 |

**NA: Not Applicable NE: Not Established TD: Total Dust RD: Respirable Dust RF: Respirable Fraction*

4. First Aid Measures

Eye Contact: Flush thoroughly with running water. If irritation persists, seek medical attention.
Skin Contact: Wash skin with soap and water if irritation occurs.
Inhalation: If symptoms develop from exposure to dust, remove to fresh air.
Ingestion: No adverse effect expected. If large amounts are ingested, consult a physician.

5. Firefighting Measures

Fire Extinguishing Media

Suitable Media: Water, Foam, Carbon Dioxide, Dry Chemical

Special hazards arising from the substance or mixture:

Excessive dust from cellulose can mix with air and become flammable and explosive if exposed to an ignition source.

Hazardous Products of Combustion: Carbon dioxide and carbon monoxide

Advice for Firefighters: Use self contained breathing apparatus.

6. Accidental Release Measures

Steps to be taken in case material is released or spilled:

None required

7. Handling and Storage

Storage: Keep product away from excessive heat and flame. Store in a dry environment

8. Exposure Controls / Personal Protection

Eye Protection: Not required
Hand Protection: Not required
Respiratory Protection: Not required
Ventilation: Local exhaust to remove dust if it occurs during processing to keep levels below the OSHA TD limit
Industrial Hygiene: Wash thoroughly after handling product prior to eating, drinking, or smoking.

9. Physical and Chemical Properties

Appearance : White paper **NA: Not Applicable** **ND: No Data**
Odor : None
Auto Ignition Temp : 462°F
Specific Gravity : 0.45 g/cc

10. Stability and Reactivity

Stability: Stable
Hazardous Polymerization: Will not occur
Incompatible Materials: Avoid open flame
Hazardous Products of Decomposition Carbon dioxide, carbon monoxide, low molecular weight hydrocarbons (incomplete combustion).

11. Toxicological Information

- No components of this product are known to be hazardous according to the criteria specified in 29CFR1910.1200

12. Ecological Information

- This product has no known eco-toxicological effects.

13. Disposal Considerations

- No special disposal procedures required. Dispose in accordance with (non-RCRA regulated) Federal, State, and Local regulations.

14. Transport Information

- DOT - Not regulated

15. Regulatory Information

- Non-dangerous substance, combustibles specified by fire prevention ordinances for rag and wastepaper
- REACH: Regulation (EC) No 1907/2006 (as amended by Regulation (EU) No. 453/2010 with respect to SDSs)
- This product does not contain substances that require a warning pursuant to California Proposition 65

16. Other Information

Revision 04 **Revision Date 1011019** **Supersedes** Rev 03 **Issue Date:** 120513

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship. This information is not valid if the product has been combined with other materials.