# FlameOFF IX2

## FlameOFF Coatings

Version No: **0.7**
Safety Data Sheet according to OSHA HazCom Standard (2024) requirements

Chemwatch Hazard Alert Code: 4

Initial Date: **14/01/2025**
Revision Date: **21/10/2025**
Print Date: **21/10/2025**
L.GHS.USA.EN

## SECTION 1 Identification

### Product Identifier

| | |
|---|---|
| **Product name** | FlameOFF IX2 |
| **Synonyms** | 3912S0250 (L2502555) 2K Acrylic FR Paint |
| **Proper shipping name** | PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) (vapour pressure at 50 °C more than 110 kPa); PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) (vapour pressure at 50 °C not more than 110 kPa); PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C not more than 110 kPa); PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C more than 110 kPa) |
| **Other means of identification** | Not Available |

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

| | |
|---|---|
| **Relevant identified uses** | Industrial Paint |

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

| | |
|---|---|
| **Registered company name** | **FlameOff Coatings** |
| **Address** | 3915 Beryl Rd. Suite 130, Raleigh, NC 27607 North Carolina United States |
| **Telephone** | (888) 486-2518 |
| **Fax** | Not Available |
| **Website** | https://flameoffcoatings.com/ |
| **Email** | info@flameoff.com |

### Emergency phone number

| | |
|---|---|
| **Association / Organisation** | **CHEMWATCH EMERGENCY RESPONSE (24/7)** |
| **Emergency telephone number(s)** | +1 855-237-5573 (ID#: 9-b91203) |
| **Other emergency telephone number(s)** | +61 3 9573 3188 |

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

**Chemwatch Hazard Ratings**

| | | Min | Max |
|---|---|---|---|
| Flammability | 3 | | |
| Toxicity | 2 | | |
| Body Contact | 2 | | |
| Reactivity | 0 | | |
| Chronic | 4 | | |

0 = Minimum
1 = Low
2 = Moderate
3 = High
4 = Extreme

**NFPA 704 diamond**


Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

| | |
|---|---|
| **Classification** | Flammable Liquids Category 2, Skin Corrosion/Irritation Category 2, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 2A, Specific Target Organ Toxicity - Single Exposure Category 3, Germ Cell Mutagenicity Category 2, Carcinogenicity Category 2, Specific Target Organ Toxicity - Repeated Exposure Category 2, Hazardous to the Aquatic Environment Long-Term Hazard Category 4 |

### Label elements

| | |
|---|---|
| **Hazard pictogram(s)** |  |
| **Signal word** | **Danger** |

### Hazard statement(s)

**Page 1 continued...**

| | |
|---|---|
| **H225** | Highly flammable liquid and vapour. |
| **H315** | Causes skin irritation. |
| **H317** | May cause an allergic skin reaction. |
| **H319** | Causes serious eye irritation. |
| **H335+H336** | May cause respiratory irritation or drowsiness or dizziness. |
| **H341** | Suspected of causing genetic defects. |
| **H351** | Suspected of causing cancer. |
| **H373** | May cause damage to organs through prolonged or repeated exposure. (Inhalation) |
| **H413** | May cause long lasting harmful effects to aquatic life. |

**Hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) General**

| | |
|---|---|
| **P101** | If medical advice is needed, have product container or label at hand. |
| **P102** | Keep out of reach of children. |

**Precautionary statement(s) Prevention**

| | |
|---|---|
| **P201** | Obtain special instructions before use. |
| **P210** | Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. |

**Precautionary statement(s) Response**

| | |
|---|---|
| **P304+P340** | IF INHALED: Remove person to fresh air and keep comfortable for breathing. |
| **P308+P313** | IF exposed or concerned: Get medical advice/ attention. |

**Precautionary statement(s) Storage**

| | |
|---|---|
| **P403+P233** | Store in a well-ventilated place. Keep container tightly closed. |
| **P403+P235** | Store in a well-ventilated place. Keep cool. |

**Precautionary statement(s) Disposal**

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

No further product hazard information.

## SECTION 3 Composition / information on ingredients

**Substances**

See section below for composition of Mixtures

**Mixtures**

| CAS No | %[weight] | Name |
|---|---|---|
| 13463-67-7 | 10-20 | titanium dioxide |
| 14807-96-6 | 1-5 | talc |
| 68333-79-9 | 30-40 | ammonium polyphosphate |
| 108-78-1 | 15-20 | melamine |
| 115-77-5 | 5-10 | pentaerythritol |
| 80-62-6 | 25-30 | methyl methacrylate |
| 103-11-7 | 5-10 | 2-ethylhexyl acrylate |
| 25448-25-3 | <1 | triisodecyl phosphite |
| 38668-48-3 | 1-4 | dipropoxy-p-toluidine |

## SECTION 4 First-aid measures

**Description of first aid measures**

| | |
|---|---|
| **Eye Contact** | If this product comes in contact with the eyes:<br>▸ Wash out immediately with fresh running water.<br>▸ Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.<br>▸ Seek medical attention without delay; if pain persists or recurs seek medical attention.<br>▸ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel. |
| **Skin Contact** | If skin contact occurs:<br>▸ Immediately remove all contaminated clothing, including footwear.<br>▸ Flush skin and hair with running water (and soap if available).<br>▸ Seek medical attention in event of irritation. |
| **Inhalation** | ▸ If fumes or combustion products are inhaled remove from contaminated area.<br>▸ Lay patient down. Keep warm and rested.<br>▸ Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.<br>▸ Apply artificial respiration if not breathing, preferably with a demand valve resuscitator, bag-valve mask device, or pocket mask as trained. Perform CPR if necessary.<br>▸ Transport to hospital, or doctor, without delay. |
| **Ingestion** | ▸ Immediately give a glass of water. |

**Continued...**

| | |
|---|---|
| | ▸ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor. |

**Most important symptoms and effects, both acute and delayed**

See Section 11

**Indication of any immediate medical attention and special treatment needed**

for phosphate salts intoxication:

- All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.
- Ingestion of large quantities of phosphate salts (over 1.0 grams for an adult) may cause an osmotic catharsis resulting in diarrhoea and probable abdominal cramps. Larger doses such as 4-8 grams will almost certainly cause these effects in everyone. In healthy individuals most of the ingested salt will be excreted in the faeces with the diarrhoea and, thus, not cause any systemic toxicity. Doses greater than 10 grams hypothetically may cause systemic toxicity.
- Treatment should take into consideration both anionic and cation portion of the molecule.
- All phosphate salts, except calcium salts, have a hypothetical risk of hypocalcaemia, so calcium levels should be monitored.

Treat symptomatically.
For methyl methacrylate:
Significant effects developing over a work-shift are not detected by symptomatology, blood pressure, respiratory function testing, haemoglobin and white cell count, urinalysis and blood chemistry. Effects may occur in high concentration exposure groups with regard to serum glucose and blood urea, nitrogen, cholesterol, albumin and total bilirubin values. Possible alterations occur in skin and nervous system symptomatology, urinalysis findings and serum triglycerides. Diagnostic signs taken as indicative of methyl methacrylate-induced local neurotoxicity include sensory nerve distal conduction velocities. These deficits appear to result from diffusion of the substance into neurons, lysis of membrane lipids and demyelination.

## SECTION 5 Fire-fighting measures

**Extinguishing media**

**Special hazards arising from the substrate or mixture**

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

**Special protective equipment and precautions for fire-fighters**

| | |
|---|---|
| **Fire Fighting** | |
| **Fire/Explosion Hazard** | ▸ Liquid and vapour are highly flammable.<br>▸ Severe fire hazard when exposed to heat, flame and/or oxidisers.<br>Combustion products include:<br>carbon dioxide ($CO_2$)<br>nitrogen oxides (NOx)<br>phosphorus oxides (POx)<br>metal oxides<br>other pyrolysis products typical of burning organic material.<br>Phosphorus-containing flame retardants effectively work in the solid phase of burning materials (as distinct from the burning gas above them). When heated the phosphorus reacts to give a polymeric form of phosphoric acid. |

## SECTION 6 Accidental release measures

**Personal precautions, protective equipment and emergency procedures**

See section 8

**Environmental precautions**

See section 12

**Methods and material for containment and cleaning up**

| | |
|---|---|
| **Minor Spills** | Environmental hazard - contain spillage.<br>▸ Remove all ignition sources.<br>▸ Clean up all spills immediately. |
| **Major Spills** | Environmental hazard - contain spillage.<br>▸ Clear area of personnel and move upwind.<br>▸ Alert Fire Brigade and tell them location and nature of hazard. |

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

## SECTION 7 Handling and storage

**Precautions for safe handling**

| | |
|---|---|
| **Safe handling** | ▸ Containers, even those that have been emptied, may contain explosive vapours.<br>▸ Do NOT cut, drill, grind, weld or perform similar operations on or near containers.<br>▸ Avoid all personal contact, including inhalation.<br>▸ Wear protective clothing when risk of exposure occurs.<br>▸ **DO NOT** allow clothing wet with material to stay in contact with skin |
| **Other information** | ▸ Store in original containers in approved flame-proof area.<br>▸ No smoking, naked lights, heat or ignition sources. |

**Conditions for safe storage, including any incompatibilities**

| | |
|---|---|
| **Suitable container** | For acrylates or methacrylates:<br>Storage tanks and pipes should be made of stainless steel or aluminium.<br>Although they do not corrode carbon steel, there is a risk of contamination if corrosion does occur.<br>▸ Packing as supplied by manufacturer.<br>▸ Plastic containers may only be used if approved for flammable liquid.<br>▸ For low viscosity materials (i) : Drums and jerry cans must be of the non-removable head type. (ii) : Where a can is to be used as an inner package, the can must have a screwed enclosure. |
| **Storage incompatibility** | 2-Ethylhexyl acrylate:<br>▸ may polymerise unless inhibited; heat, sunlight, contaminants or peroxides may cause polymerisation |

**Continued...**

- reacts with strong oxidisers and may ignite or explode
- is incompatible with strong acids, alkalis, aliphatic amines, alkanolamines, nitrates
- uninhibited monomer vapour may block vents and confined spaces by forming solid polymer

Methyl acrylate:
- may polymerise explosively when heated above 21 C, or in light, or when when inhibitor concentrations fall to low levels
- storage containers may explode at elevated temperatures
- reacts violently with strong oxidisers
- is incompatible with strong acids, alkalis, aliphatic amines, alkanolamines, polyvinyl chloride, mercaptans, nitro- compounds, perborates, azides, ethers, ketones, aldehydes, nitrates, nitrites, reducing agents, acid anhydrides, acid chlorides, concentrated mineral acids, metal salts, strong bases,
- is usually stored below 10 deg C
- vapour may block vents and confined spaces after forming solid polymers

NOTE: Contact with alkali solutions will remove inhibitor and render material unstable on storage.
Avoid oxygen content of less than 5%
Titanium dioxide
- reacts with strong acids, strong oxidisers
- reacts violently with aluminium, calcium, hydrazine, lithium (at around 200 deg C.), magnesium, potassium, sodium, zinc, especially at elevated temperatures - these reactions involves reduction of the oxide and are accompanied by incandescence
- dust or powders can ignite and then explode in a carbon dioxide atmosphere
- WARNING: Avoid or control reaction with peroxides. All ***transition meta***l peroxides should be considered as potentially explosive.
- Phosphates are incompatible with oxidising and reducing agents.
- Phosphates are susceptible to formation of highly toxic and flammable phosphine gas in the presence of strong reducing agents such as hydrides.
- Avoid strong acids, acid chlorides, acid anhydrides and chloroformates.
- Stable under controlled storage conditions provided material contains adequate stabiliser / polymerisation inhibitor.
- Bulk storages may have special storage requirements
- WARNING: Gradual decomposition in strong, sealed containers may lead to a large pressure build-up and subsequent explosion.

## SECTION 8 Exposure controls / personal protection

### Control parameters

**Occupational Exposure Limits (OEL)**

**INGREDIENT DATA**

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---|---|---|---|---|---|
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | titanium dioxide | Titanium dioxide - Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | titanium dioxide | Inert or Nuisance Dust: Total Dust | 15 mg/m3 / 50 mppcf | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | titanium dioxide | Inert or Nuisance Dust: Respirable fraction | 5 mg/m3 / 15 mppcf | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | titanium dioxide | Titanium dioxide | Not Available | Not Available | Not Available | Ca; See Appendix A |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | talc | Particulates Not Otherwise Regulated (PNOR)- Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | talc | Particulates Not Otherwise Regulated (PNOR)- Respirable fraction | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | talc | Silicates (less than 1% crystalline silica): Soapstone | 20 mppcf | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | talc | Silicates (less than 1% crystalline silica): Talc (not containing asbestos) | 20 mppcf | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | talc | Silicates (less than 1% crystalline silica): Talc (containing asbestos) | Not Available | Not Available | Not Available | Use asbestos limit |
| US NIOSH Recommended Exposure Limits (RELs) | talc | Talc (containing no asbestos and less than 1% quartz) - respirable | 2 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | melamine | Particulates Not Otherwise Regulated (PNOR)- Respirable fraction | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | melamine | Particulates Not Otherwise Regulated (PNOR)- Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | melamine | Inert or Nuisance Dust: Total Dust | 15 mg/m3 / 50 mppcf | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-3 | melamine | Inert or Nuisance Dust: Respirable fraction | 5 mg/m3 / 15 mppcf | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | melamine | Particulates not otherwise regulated | Not Available | Not Available | Not Available | See Appendix D |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | pentaerythritol | Pentaerythritol- Total dust | 15 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table | pentaerythritol | Pentaerythritol- Respirable fraction | 5 mg/m3 | Not Available | Not Available | Not Available |

**Continued...**

| Source | Ingredient | Material name | TWA | STEL | Peak | Notes |
|---|---|---|---|---|---|---|
| Z-1 | | | | | | |
| US NIOSH Recommended Exposure Limits (RELs) | pentaerythritol | Pentaerythritol - total | 10 mg/m3 | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | pentaerythritol | Pentaerythritol - respirable | 5 mg/m3 | Not Available | Not Available | Not Available |
| US OSHA Permissible Exposure Limits (PELs) Table Z-1 | methyl methacrylate | Methyl methacrylate | 100 ppm / 410 mg/m3 | Not Available | Not Available | Not Available |
| US NIOSH Recommended Exposure Limits (RELs) | methyl methacrylate | Methyl methacrylate | 100 ppm / 410 mg/m3 | Not Available | Not Available | Not Available |

**Emergency Limits**

| Ingredient | TEEL-1 | TEEL-2 | TEEL-3 |
|---|---|---|---|
| titanium dioxide | 30 mg/m3 | 330 mg/m3 | 2,000 mg/m3 |
| melamine | 30 mg/m3 | 340 mg/m3 | 630 mg/m3 |
| pentaerythritol | 30 mg/m3 | 90 mg/m3 | 540 mg/m3 |
| methyl methacrylate | Not Available | Not Available | Not Available |
| 2-ethylhexyl acrylate | 15 ppm | 120 ppm | 150 ppm |

| Ingredient | Original IDLH | Revised IDLH |
|---|---|---|
| titanium dioxide | 5,000 mg/m3 | Not Available |
| talc | 1,000 mg/m3 | Not Available |
| ammonium polyphosphate | Not Available | Not Available |
| melamine | Not Available | Not Available |
| pentaerythritol | Not Available | Not Available |
| methyl methacrylate | 1,000 ppm | Not Available |
| 2-ethylhexyl acrylate | Not Available | Not Available |
| triisodecyl phosphite | Not Available | Not Available |
| dipropoxy-p-toluidine | Not Available | Not Available |

**MATERIAL DATA**

IFRA Prohibited Fragrance Substance
The International Fragrance Association (IFRA) Standards form the basis for the globally accepted and recognized risk management system for the safe use of fragrance ingredients and are part of the IFRA Code of Practice. This is the self-regulating system of the industry, based on risk assessments carried out by an independent Expert Panel
For talc (a form of magnesium silicate):
Most health problems associated with occupational exposure to talcs appear to evolve mostly from the nonplatiform content of the talc being mined or milled (being the asbestos-like amphiboles, serpentines (asbestiformes) and other minerals in the form of acicular, prismatic and fibrous crystals including, possibly, asbestos).
Because of severe health effects associated with exposures to asbestos, regulatory agencies tend to regard all elongate mineral crystal particles, whether prismatic, acicular, fibrous, as asbestos - the only provision is the particles have an aspect ratio (length to diameter) of 3:1 or greater.
Animals exposed by inhalation to 10 mg/m3 titanium dioxide show no significant fibrosis, possibly reversible tissue reaction. The architecture of lung air spaces remains intact.
Odour Threshold Value (methyl methacrylate): 0.049 ppm (detection), 0.34 ppm (recognition)
NOTE: Detector tubes measuring in excess of 50 ppm, are available.
Concentrations as low as 125 ppm methyl methacrylate have produced irritation of the mucous membranes of exposed workers.

## Exposure controls

| | |
|---|---|
| **Appropriate engineering controls** | Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. |
| **Individual protection measures, such as personal protective equipment** |  |
| **Eye and face protection** | ▸ Safety glasses with side shields.<br>▸ Chemical goggles. |
| **Skin protection** | See Hand protection below |
| **Hands/feet protection** | ▸ Wear chemical protective gloves, e.g. PVC.<br>▸ Wear safety footwear or safety gumboots, e.g. Rubber<br>**NOTE:**<br>▸ The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.<br>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. |
| **Body protection** | See Other protection below |
| **Other protection** | ▸ Overalls.<br>▸ PVC Apron.<br>▸ Some plastic personal protective equipment (PPE) (e.g. gloves, aprons, overshoes) are not recommended as they may produce static electricity.<br>▸ For large scale or continuous use wear tight-weave non-static clothing (no metallic fasteners, cuffs or pockets). |

### Respiratory protection

Type AK-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators

**Continued...**

is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

· 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

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

| | |
|---|---|
| **Appearance** | Not Available |

| | | | |
|---|---|---|---|
| **Physical state** | Liquid | **Relative density (Water = 1)** | 1.30 |
| **Odour** | Not Available | **Partition coefficient n-octanol / water** | Not Available |
| **Odour threshold** | Not Available | **Auto-ignition temperature (°C)** | Not Available |
| **pH (as supplied)** | Not Available | **Decomposition temperature (°C)** | Not Available |
| **Melting point / freezing point (°C)** | Not Available | **Viscosity (cSt)** | Not Available |
| **Initial boiling point and boiling range (°C)** | Not Available | **Molecular weight (g/mol)** | Not Available |
| **Flash point (°C)** | 10 | **Taste** | Not Available |
| **Evaporation rate** | Not Available | **Explosive properties** | Not Available |
| **Flammability** | HIGHLY FLAMMABLE. | **Oxidising properties** | Not Available |
| **Upper Explosive Limit (%)** | Not Available | **Surface Tension (dyn/cm or mN/m)** | Not Available |
| **Lower Explosive Limit (%)** | Not Available | **Volatile Component (%vol)** | Not Available |
| **Vapour pressure (kPa)** | Not Available | **Gas group** | Not Available |
| **Solubility in water** | Immiscible | **pH as a solution (1%)** | Not Available |
| **Vapour density (Air = 1)** | Not Available | **VOC g/L** | Not Available |
| **Heat of Combustion (kJ/g)** | Not Available | **Ignition Distance (cm)** | Not Available |
| **Flame Height (cm)** | Not Available | **Flame Duration (s)** | Not Available |
| **Enclosed Space Ignition Time Equivalent (s/m3)** | Not Available | **Enclosed Space Ignition Deflagration Density (g/m3)** | Not Available |
| **Nanoform Solubility** | Not Available | **Nanoform Particle Characteristics** | Not Available |
| **Particle Size** | Not Available | | |

## SECTION 10 Stability and reactivity

| | |
|---|---|
| **Reactivity** | See section 7 |
| **Chemical stability** | - Stable under controlled storage conditions provided material contains adequate stabiliser / polymerisation inhibitor.<br>- Bulk storages may have special storage requirements<br>- WARNING: Gradual decomposition in strong, sealed containers may lead to a large pressure build-up and subsequent explosion. |
| **Possibility of hazardous reactions** | See section 7 |
| **Conditions to avoid** | See section 7 |
| **Incompatible materials** | See section 7 |
| **Hazardous decomposition products** | See section 5 |

## SECTION 11 Toxicological information

### Information on toxicological effects

| | |
|---|---|
| **a) Acute Toxicity** | Based on available data, the classification criteria are not met. |
| **b) Skin Irritation/Corrosion** | There is sufficient evidence to classify this material as skin corrosive or irritating. |
| **c) Serious Eye Damage/Irritation** | There is sufficient evidence to classify this material as eye damaging or irritating |

**Continued...**

| | |
|---|---|
| **d) Respiratory or Skin sensitisation** | There is sufficient evidence to classify this material as sensitising to skin or the respiratory system |
| **e) Mutagenicity** | There is sufficient evidence to classify this material as mutagenic |
| **f) Carcinogenicity** | There is sufficient evidence to classify this material as carcinogenic |
| **g) Reproductivity** | Based on available data, the classification criteria are not met. |
| **h) STOT - Single Exposure** | There is sufficient evidence to classify this material as toxic to specific organs through single exposure |
| **i) STOT - Repeated Exposure** | There is sufficient evidence to classify this material as toxic to specific organs through repeated exposure |
| **j) Aspiration Hazard** | Based on available data, the classification criteria are not met. |
| **Inhaled** | Evidence shows, or practical experience predicts, that the material produces irritation of the respiratory system, in a substantial number of individuals, following inhalation. In contrast to most organs, the lung is able to respond to a chemical insult by first removing or neutralising the irritant and then repairing the damage.<br>Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.<br>Workers in plants manufacturing methyl methacrylate have complained of headaches, pains in the extremities, fatigue, sleep disturbance, irritability and loss of memory. A Russian report associated disturbances in the level of insulin, prolactin and circulating somatotropic hormone in women to occupational exposure to methyl methacrylate.<br>Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.<br>If exposure to highly concentrated vapour atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and unless resuscitated - death. |
| **Ingestion** | The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum.<br>At sufficiently high doses the material may be hepatotoxic (i.e. poisonous to the liver). Signs may include nausea, stomach pains, low fever, loss of appetite, dark urine, clay-coloured stools, jaundice (yellowing of the skin or eyes)<br>Inorganic polyphosphates are used extensively in domestic and industrial products. Rats fed 10% sodium trimetaphosphate for a month exhibited transient tubular necrosis;<br>those given 10% sodium metaphosphate exhibited growth retardation; 10% sodium hexametaphosphate produced pale and swollen kidneys.<br>Oral doses of 5 ml/kg methyl methacrylate in dogs produce hypotension, signs of central nervous system (CNS) depression, hepatic and renal degeneration and death in respiratory arrest<br><br>Phosphates are slowly and incompletely absorbed from the gastrointestinal tract and are unlikely (other than in abuse) to produce the systemic effects which occur when introduced by other routes. Such effects include vomiting, lethargy, fever, diarrhoea, falls in blood pressure, slow pulse, cyanosis, carpal spasm, coma and tetany.<br><br>Body content of titanium is presumed to be high (because titanium occupies fourth place in occurrence in the earth's surface) and is reported to be general in all organs of the body. Animal experiments have shown that dusts of titanium and several compounds exhibit only slight toxicity.<br>Human metabolism allows detoxification of ammonia, however toxic effects appear if this mechanism is overwhelmed by other than small doses.<br>Ingestion of ammonium salts may produce local irritation, nausea, vomiting and diarrhoea. |
| **Skin Contact** | Evidence exists, or practical experience predicts, that the material either produces inflammation of the skin in a substantial number of individuals following direct contact, and/or produces significant inflammation when applied to the healthy intact skin of animals, for up to four hours, such inflammation being present twenty-four hours or more after the end of the exposure period. Skin irritation may also be present after prolonged or repeated exposure; this may result in a form of contact dermatitis (nonallergic).<br>The material may accentuate any pre-existing dermatitis condition<br>Reports of dental technicians, surgeons and manufacturing employees with direct skin contact with methyl methacrylate document paresthesias of the digits and mild local axonal degeneration.<br>Open cuts, abraded or irritated skin should not be exposed to this material<br>Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.<br>Undiluted inorganic phosphates may be severely irritating to the skin but in typical cosmetic formulations (where they act as chelators) they are only mildly irritating.<br>In clinical testing, irritation is seen as a function of concentration; concentrations as high as 1% produced no irritation in contact allergy patients. |
| **Eye** | This material causes serious eye irritation.<br>Inorganic phosphates can produce severe eye irritation. The severity of the response is concentration dependent. |
| **Chronic** | On the basis, primarily, of animal experiments, concern has been expressed that the material may produce carcinogenic or mutagenic effects; in respect of the available information, however, there presently exists inadequate data for making a satisfactory assessment.<br>Long-term exposure to respiratory irritants may result in disease of the airways involving difficult breathing and related systemic problems.<br>Practical evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a substantial number of individuals at a greater frequency than would be expected from the response of a normal population.<br>Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching.<br>Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals.<br>Substances that can cause occupational asthma (also known as asthmagens and respiratory sensitisers) can induce a state of specific airway hyper-responsiveness via an immunological, irritant or other mechanism.<br>Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.<br>Serious damage (clear functional disturbance or morphological change which may have toxicological significance) is likely to be caused by repeated or prolonged exposure. As a rule the material produces, or contains a substance which produces severe lesions.<br>Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.<br>In chronic animal studies inorganic polyphosphates produced growth inhibition, increased kidney weights (with calcium deposition and desquamation), bone decalcification, parathyroid hypertrophy and hyperplasia, inorganic phosphaturia, hepatic focal necrosis and alterations to the size of muscle fibres.<br>Inorganic phosphates are not genotoxic in bacterial systems nor are they carcinogenic in rats.<br>Prolonged and repeated exposures can cause liver and kidney damage. Hypotension induced by methyl methacrylate in surgical bone cement has been followed by cardiac arrest with at least one fatality in a patient undergoing surgery reported.<br>Dogs given daily doses of sodium phosphate dibasic for 9-22 weeks showed calcium deposits in the kidneys (nephrocalcinosis) with disseminated atrophy of the proximal tubule. Animals fed on sodium phosphate dibasic and potassium dihydrogen phosphate, in both short- and long-term studies, showed increased bone porosity; hyperparathyroidism and soft tissue calcification were also evident.<br>Long term exposure to the dusts of titanium and several of its compounds produces chronic lung disease (fibrosis) in animals. Radiological evidence exists amongst titanium dioxide workers suggesting chronic lung changes which resemble a slight form of silicosis. |

| | |
|---|---|
| **FlameOFF IX2** | |

| TOXICITY | IRRITATION |
|---|---|

**Continued...**

| | | |
|---|---|---|
| | Not Available | Not Available |

| **titanium dioxide** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| dermal (hamster) LD50: >=10000 mg/kg[2] | Eye: no adverse effect observed (not irritating)[1] |
| Inhalation (Rat) LC50: >2.28 mg/l4h[1] | Skin (Human): 300ug/3D (intermittent) - Mild |
| Oral (Rat) LD50: >=2000 mg/kg[1] | Skin: no adverse effect observed (not irritating)[1] |

| **talc** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| dermal (rat) LD50: >2000 mg/kg[1] | Eye: no adverse effect observed (not irritating)[1] |
| Inhalation (Rat) LC50: >2.1 mg/l4h[1] | Skin (Human): 300ug/3D (intermittent) - Mild |
| Oral (Rat) LD50: >5000 mg/kg[1] | Skin: no adverse effect observed (not irritating)[1] |

| **ammonium polyphosphate** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| Dermal (rabbit) LD50: >3160 mg/kg[2] | Eye: adverse effect observed (irritating)[1] |
| Inhalation (Rat) LC50: >4.85 mg/l4h[1] | Skin: no adverse effect observed (not irritating)[1] |
| Oral (Rat) LD50: >=300<=2000 mg/kg[1] | |

| **melamine** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| Dermal (rabbit) LD50: >1000 mg/kg[2] | Eye (Rodent - rabbit): 500mg/24H - Mild |
| Oral (Rat) LD50: 3161 mg/kg[2] | Eye: no adverse effect observed (not irritating)[1] |
| | Skin: no adverse effect observed (not irritating)[1] |

| **pentaerythritol** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| Dermal (rabbit) LD50: >10000 mg/kg[1] | Eye: no adverse effect observed (not irritating)[1] |
| Inhalation (Rat) LC50: >5.15 mg/l4h[1] | Skin: no adverse effect observed (not irritating)[1] |
| Oral (Rat) LD50: >2000 mg/kg[1] | |

| **methyl methacrylate** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| Dermal (rabbit) LD50: >5000 mg/kg[2] | Eye (Rodent - rabbit): 150mg |
| Inhalation (Rat) LC50: 29.8 mg/l4h[1] | Eye: no adverse effect observed (not irritating)[1] |
| Oral (Rat) LD50: 7872 mg/kg[2] | Skin (Human - woman): 2%/48H |
| | Skin (Rodent - rabbit): 10gm |
| | Skin: adverse effect observed (irritating)[1] |

| **2-ethylhexyl acrylate** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| Dermal (rabbit) LD50: >177 mg/kg[1] | Eye (Rodent - rabbit): 500mg/24H - Mild |
| Oral (Mouse) LD50; >5000 mg/kg[1] | Eye (Rodent - rabbit): 5mg - Severe |
| | Eye: no adverse effect observed (not irritating)[1] |
| | Skin (Rodent - rabbit): 10mg/24H - Severe |
| | Skin (Rodent - rabbit): 20mg/24H - Moderate |
| | Skin (Rodent - rabbit): 500mg - Mild |
| | Skin: adverse effect observed (irritating)[1] |

| **triisodecyl phosphite** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| Dermal (rabbit) LD50: >5000 mg/kg[1] | Eye: no adverse effect observed (not irritating)[1] |
| Inhalation (Rat) LC50: >3.15 mg/L4h[2] | Skin (Rodent - rabbit): 500uL |
| Oral (Rat) LD50: >5000 mg/kg[1] | Skin: no adverse effect observed (not irritating)[1] |

| **dipropoxy-p-toluidine** | |
|---|---|
| **TOXICITY** | **IRRITATION** |
| dermal (rat) LD50: >2000 mg/kg[1] | Eye: adverse effect observed (irritating)[1] |
| Oral (Rat) LD50: >25<200 mg/kg[1] | Skin: no adverse effect observed (not irritating)[1] |

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

**Continued...**

| | |
|---|---|
| **FlameOFF IX2** | Allergic reactions which develop in the respiratory passages as bronchial asthma or rhinoconjunctivitis, are mostly the result of reactions of the allergen with specific antibodies of the IgE class and belong in their reaction rates to the manifestation of the immediate type. In addition to the allergen-specific potential for causing respiratory sensitisation, the amount of the allergen, the exposure period and the genetically determined disposition of the exposed person are likely to be decisive.<br>Particular attention is drawn to so-called atopic diathesis which is characterised by an increased susceptibility to allergic rhinitis, allergic bronchial asthma and atopic eczema (neurodermatitis) which is associated with increased IgE synthesis.<br>Exogenous allergic alveolitis is induced essentially by allergen specific immune-complexes of the IgG type; cell-mediated reactions (T lymphocytes) may be involved. Such allergy is of the delayed type with onset up to four hours following exposure. |
| **TITANIUM DIOXIDE** | * IUCLID<br><br>**WARNING:** This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.<br>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>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. |
| **TALC** | For talc (a form of magnesium silicate)<br>The overuse of talc in nursing infants has resulted in pulmonary oedema, pneumonia and death within hours of inhaling talcum powder.The powder dries the mucous membranes of the bronchioles, disrupts pulmonary clearance, clogs smaller airways. Victims display wheezing, rapid or difficult breathing, increased pulse, cyanosis, fever. |
| **MELAMINE** | The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis. |
| **METHYL METHACRYLATE** | Inhalation (human) TCLo: 60 mg/m3(15 ppm) [* Manuf. Rohm & Haas] |
| **2-ETHYLHEXYL ACRYLATE** | Substance has been investigated as a tumourigen on mouse skin.<br><br>The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.<br>The material may produce severe skin irritation after prolonged or repeated exposure, and may produce a contact dermatitis (nonallergic).<br>This form of dermatitis is often characterised by skin redness (erythema) thickening of the epidermis.<br>Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.<br>For 2-ethylhexyl acrylate:<br>**Animal studies:** Skin sensitisation was observed in challenged guinea pigs that had been induced with intradermal injections of 2-ethylhexyl acrylate in concentrations of 0.5 M or 0.17 M in Freund s complete adjuvant three times during 9 days; that had been induced with epicutaneous or intracutaneous application of 2-ethylhexyl acrylate in concentrations of 0.1% (w/v) 3 times a week for 3 weeks<br>The olfactory epithelium of the nasal mucosa was degenerated when Wistar rats inhaled 2-ethylhexyl acrylate at 225 and 750 mg/m3 6 hours a day, 5 days per week for 90 days. A reduced body weight gain, lethargy and reduced levels for albumin were also observed at these doses. |
| **FlameOFF IX2 & TITANIUM DIOXIDE** | Laboratory (in vitro) and animal studies show, exposure to the material may result in a possible risk of irreversible effects, with the possibility of producing mutation.<br>For titanium dioxide:<br>Humans can be exposed to titanium dioxide via inhalation, ingestion or dermal contact. In human lungs, the clearance kinetics of titanium dioxide is poorly characterized relative to that in experimental animals. |
| **FlameOFF IX2 & TITANIUM DIOXIDE & TALC & METHYL METHACRYLATE & 2-ETHYLHEXYL ACRYLATE & TRIISODECYL PHOSPHITE** | Asthma-like symptoms may continue for months or even years after exposure to the material ends. This may be due to a non-allergic condition known as reactive airways dysfunction syndrome (RADS) which can occur after exposure to high levels of highly irritating compound. |
| **FlameOFF IX2 & MELAMINE & METHYL METHACRYLATE & 2-ETHYLHEXYL ACRYLATE** | The following information refers to contact allergens as a group and may not be specific to this product.<br>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. |
| **FlameOFF IX2 & METHYL METHACRYLATE** | **For methyl methacrylate:**<br>Acute toxicity: MMA is rapidly absorbed after oral or inhalatory administration. ***In vitro*** skin absorption studies in human skin indicate that MMA can be absorbed through human skin. |
| **FlameOFF IX2 & MELAMINE** | for melamine:<br>The toxicity of melamine to mammals is also low. Melamine is not metabolized and is rapidly eliminated via urine in a study with oral application to rats. |
| **TITANIUM DIOXIDE & TALC & TRIISODECYL PHOSPHITE** | No significant acute toxicological data identified in literature search. |
| **TALC & MELAMINE & METHYL METHACRYLATE** | The substance is classified by IARC as Group 3:<br>**NOT** classifiable as to its carcinogenicity to humans.<br>Evidence of carcinogenicity may be inadequate or limited in animal testing. |
| **METHYL METHACRYLATE & 2-ETHYLHEXYL ACRYLATE** | Where no 'official' classification for acrylates and methacrylates exists, there has been cautious attempts to create classifications in the absence of contrary evidence. For example<br>Monalkyl or monoarylesters of acrylic acids should be classified as R36/37/38 and R51/53<br>Monoalkyl or monoaryl esters of methacrylic acid should be classified as R36/37/38<br>Based on the available oncogenicity data and without a better understanding of the carcinogenic mechanism the Health and Environmental Review Division (HERD), Office of Toxic Substances (OTS), of the US EPA previously concluded that all chemicals that contain the acrylate or methacrylate moiety (CH2=CHCOO or CH2=C(CH3)COO) should be considered to be a carcinogenic hazard unless shown otherwise by adequate testing.<br>This position has now been revised and acrylates and methacrylates are no longer ***de facto*** carcinogens. |

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

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

## SECTION 12 Ecological information

**Continued...**

**Toxicity**

**FlameOFF IX2**

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

**titanium dioxide**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| BCF | 1008h | Fish | <1.1-9.6 | 7 |
| EC50 | 72h | Algae or other aquatic plants | 3.75-7.58mg/l | 4 |
| EC50 | 48h | Crustacea | 1.9mg/l | 2 |
| NOEC(ECx) | 672h | Fish | >=0.004mg/L | 2 |
| EC50 | 96h | Algae or other aquatic plants | 179.05mg/l | 2 |
| LC50 | 96h | Fish | 1.85-3.06mg/l | 4 |

**talc**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| NOEC(ECx) | 720h | Algae or other aquatic plants | 918.089mg/l | 2 |
| EC50 | 96h | Algae or other aquatic plants | 7202.7mg/l | 2 |
| LC50 | 96h | Fish | 89581.016mg/l | 2 |

**ammonium polyphosphate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 72h | Algae or other aquatic plants | >97.1mg/l | 2 |
| EC50 | 48h | Crustacea | 90.89mg/L | 4 |
| NOEC(ECx) | 72h | Algae or other aquatic plants | 3.57mg/l | 2 |
| LC50 | 96h | Fish | 70mg/L | 4 |

**melamine**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| BCF | 1008h | Fish | <0.38 | 7 |
| EC50 | 48h | Crustacea | <180mg/l | 2 |
| NOEC(ECx) | 1344h | Fish | 3.925mg/L | 4 |
| EC50 | 96h | Algae or other aquatic plants | 325mg/l | 2 |
| LC50 | 96h | Fish | >3000mg/l | 2 |

**pentaerythritol**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| BCF | 1008h | Fish | 0.2-2.1 | 7 |
| EC50 | 72h | Algae or other aquatic plants | >1000mg/l | 2 |
| EC50 | 48h | Crustacea | 30477-37043mg/L | 4 |
| NOEC(ECx) | 24h | Fish | >5mg/l | 1 |
| LC50 | 96h | Fish | >100mg/l | 2 |

**methyl methacrylate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 72h | Algae or other aquatic plants | >110mg/l | 2 |
| EC50 | 48h | Crustacea | 69mg/l | 1 |
| EC50 | 96h | Algae or other aquatic plants | 170mg/l | 1 |
| LC50 | 96h | Fish | >79mg/l | 2 |
| EC0(ECx) | 48h | Crustacea | 48mg/l | 1 |

**2-ethylhexyl acrylate**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 72h | Algae or other aquatic plants | 1.71mg/l | 2 |
| EC50 | 48h | Crustacea | 1.3mg/l | 2 |
| NOEC(ECx) | 504h | Crustacea | 0.136mg/l | 2 |
| EC50 | 96h | Algae or other aquatic plants | 2.65mg/l | 2 |
| LC50 | 96h | Fish | 1.1mg/l | 2 |

**triisodecyl phosphite**

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

**dipropoxy-p-toluidine**

| Endpoint | Test Duration (hr) | Species | Value | Source |
|---|---|---|---|---|
| EC50 | 72h | Algae or other aquatic plants | 245mg/l | 2 |
| EC50 | 48h | Crustacea | 28.8mg/l | 2 |
| EC50(ECx) | 48h | Crustacea | 28.8mg/l | 2 |

**Continued...**

| | | | | | |
|---|---|---|---|---|---|
| | LC50 | 96h | Fish | 17mg/l | 2 |
| ***Legend:*** | ***Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data*** | | | | |

On the basis of available evidence concerning either toxicity, persistence, potential to accumulate and or observed environmental fate and behaviour, the material may present a danger, immediate or long-term and /or delayed, to the structure and/ or functioning of natural ecosystems.
Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Do NOT allow product to come in contact with surface waters or to intertidal areas below the mean high water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash-waters.
For methyl methacrylate (MMA):
Koc : 87
Half-life (hr) air : 2.7-3
Half-life (hr) H2O surface water : 6.3-336
Henry's atm m3 /mol: 3.24E-04
BOD 5 0.14
log BCF : 0.55
**Environmental fate:**
MMA has a water solubility of 16 g/l, a vapour pressure of 42 hPa , and a log Pow of 1.83. The environmental behavior of MMA is determined by its range of 1.1 - 9.7 hours atmospheric half life and moderate volatility.
For 2-ethyl acrylate:
Koc : 363
Half-life (hr) air : 10.3
Half-life (hr) H2O surface water : 7-65
BCF : 183-53890
**Environmental fate:**
**Air:** 2-Ethylhexyl acrylate is expected to exist almost entirely in the vapour phase based on its vapour pressure. It may photolyse in sunlight.
For Ammonia:
Atmospheric Fate: Ammonia reacts rapidly with available acids (mainly sulfuric, nitric, and sometimes hydrochloric acid) to form the corresponding salts. Ammonia is persistent in the air.
For Phosphate: The principal problems of phosphate contamination of the environment relates to eutrophication processes in lakes and ponds. Phosphorus is an essential plant nutrient and is usually the limiting nutrient for blue-green algae.
for melamine:
BOD 5 : 0.006
ThOD : 3.04
**Environmental fate:**
The outstanding physical-chemical property in terms of environmental fate is a low n-octanol/water partition coefficient (log Kow -1.14, 25 C). Melamine is not readily biodegradable but adapted waste- water treatment plants can degrade it effectively.
**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

| Ingredient | Persistence: Water/Soil | Persistence: Air |
|---|---|---|
| titanium dioxide | HIGH | HIGH |
| melamine | HIGH (Half-life = 360 days) | LOW (Half-life = 0.44 days) |
| pentaerythritol | LOW | LOW |
| methyl methacrylate | LOW | LOW |
| 2-ethylhexyl acrylate | LOW | LOW |
| triisodecyl phosphite | HIGH | HIGH |
| dipropoxy-p-toluidine | HIGH | HIGH |

### Bioaccumulative potential

| Ingredient | Bioaccumulation |
|---|---|
| titanium dioxide | LOW (BCF = 10) |
| melamine | LOW (BCF = 15) |
| pentaerythritol | LOW (BCF = 0.6) |
| methyl methacrylate | LOW (BCF = 6.6) |
| 2-ethylhexyl acrylate | LOW (BCF = 289.73) |
| triisodecyl phosphite | LOW (LogKOW = 12.3101) |
| dipropoxy-p-toluidine | LOW (LogKOW = 2.01) |

### Mobility in soil

| Ingredient | Mobility |
|---|---|
| titanium dioxide | LOW (Log KOC = 23.74) |
| melamine | LOW (Log KOC = 20.79) |
| pentaerythritol | HIGH (Log KOC = 1) |
| methyl methacrylate | LOW (Log KOC = 10.14) |
| 2-ethylhexyl acrylate | LOW (Log KOC = 429) |
| triisodecyl phosphite | LOW (Log KOC = 2242000000) |
| dipropoxy-p-toluidine | LOW (Log KOC = 10) |

### Other adverse effects

One or more ingredients within this SDS has the potential of causing ozone depletion and/or photochemical ozone creation.

## SECTION 13 Disposal considerations

**Continued...**

**Waste treatment methods**

| | |
|---|---|
| **Product / Packaging disposal** | ▸ Containers may still present a chemical hazard/ danger when empty.<br>▸ Return to supplier for reuse/ recycling if possible.<br>Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area.<br>▸ **DO NOT** allow wash water from cleaning or process equipment to enter drains.<br>▸ It may be necessary to collect all wash water for treatment before disposal.<br>▸ Recycle wherever possible.<br>▸ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified. |

## SECTION 14 Transport information

**Labels Required**

| | |
|---|---|
| |  |
| **Marine Pollutant** | NO |

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

**Land transport (DOT)**

| | |
|---|---|
| 14.1. **UN number or ID number** | 1263 |
| 14.2. **UN proper shipping name** | PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) (vapour pressure at 50 °C more than 110 kPa); PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) (vapour pressure at 50 °C not more than 110 kPa); PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C not more than 110 kPa); PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C more than 110 kPa) |
| 14.3. **Transport hazard class(es)** | Class: 3<br>Subsidiary Hazard: Not Applicable |
| 14.4. **Packing group** | II |
| 14.5. **Environmental hazard** | Not Applicable |
| 14.6. **Special precautions for user** | Hazard Label: 3<br>Special provisions: 149, 367, B52, B131, IB2, T4, TP1, TP8, TP28; 367, T11, TP1, TP8, TP27; 149, 367, 383, B52, B131, IB2, T4, TP1, TP8, TP28; 367, B1, B52, B131, IB3, T2, TP1, TP29 |

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

| | |
|---|---|
| 14.1. **UN number** | 1263 |
| 14.2. **UN proper shipping name** | PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C more than 110 kPa); PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C not more than 110 kPa); PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) (vapour pressure at 50 °C not more than 110 kPa); PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) (vapour pressure at 50 °C more than 110 kPa) |
| 14.3. **Transport hazard class(es)** | ICAO/IATA Class: 3<br>ICAO / IATA Subsidiary Hazard: Not Applicable<br>ERG Code: 3L |
| 14.4. **Packing group** | II |
| 14.5. **Environmental hazard** | Not Applicable |
| 14.6. **Special precautions for user** | Special provisions: A3 A72 A192<br>Cargo Only Packing Instructions: 364; 361; 366<br>Cargo Only Maximum Qty / Pack: 60 L; 30 L; 220 L<br>Passenger and Cargo Packing Instructions: 353; 351; 355<br>Passenger and Cargo Maximum Qty / Pack: 5 L; 1 L; 60 L<br>Passenger and Cargo Limited Quantity Packing Instructions: Y341; Forbidden; Y344<br>Passenger and Cargo Limited Maximum Qty / Pack: 1 L; Forbidden; 10 L |

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

| | |
|---|---|
| 14.1. **UN number** | 1263 |
| 14.2. **UN proper shipping name** | PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C more than 110 kPa); PAINT RELATED MATERIAL (including paint thinning and reducing compound) (vapour pressure at 50 °C not more than 110 kPa); PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) (vapour pressure at 50 °C more than 110 kPa); PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) (vapour pressure at 50 °C not more than 110 kPa) |
| | IMDG Class: 3 |

**Continued...**

| | | |
|---|---|---|
| 14.3. **Transport hazard class(es)** | IMDG Subsidiary Hazard | Not Applicable |
| 14.4. **Packing group** | II | |
| 14.5 **Environmental hazard** | Not Applicable | |
| 14.6. **Special precautions for user** | EMS Number | F-E, S-E |
| | Special provisions | 163 367; 163 223 367 955 |
| | Limited Quantities | 500 mL; 5 L |

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

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

Not Applicable

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

| Product name | Group |
|---|---|
| titanium dioxide | Not Applicable |
| talc | Not Applicable |
| ammonium polyphosphate | Not Applicable |
| melamine | Not Applicable |
| pentaerythritol | Not Applicable |
| methyl methacrylate | Not Applicable |
| 2-ethylhexyl acrylate | Not Applicable |
| triisodecyl phosphite | Not Applicable |
| dipropoxy-p-toluidine | Not Applicable |

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

| Product name | Ship Type |
|---|---|
| titanium dioxide | Not Applicable |
| talc | Not Applicable |
| ammonium polyphosphate | Not Applicable |
| melamine | Not Applicable |
| pentaerythritol | Not Applicable |
| methyl methacrylate | Not Applicable |
| 2-ethylhexyl acrylate | Not Applicable |
| triisodecyl phosphite | Not Applicable |
| dipropoxy-p-toluidine | Not Applicable |

## SECTION 15 Regulatory information

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

**titanium dioxide is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US - California Proposition 65 - Carcinogens
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US DOE Temporary Emergency Exposure Limits (TEELs)
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**talc is found on the following regulatory lists**

Chemical Footprint Project - Chemicals of High Concern List
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2A: Probably carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Carcinogens
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3

**Continued...**

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

**ammonium polyphosphate is found on the following regulatory lists**

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

**melamine is found on the following regulatory lists**

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
US - Alaska Air Quality Control - Concentrations Triggering an Air Quality Episode for Air Pollutants Other Than PM-2.5
US - Massachusetts - Right To Know Listed Chemicals
US - Pennsylvania - Hazardous Substance List
US AIHA Workplace Environmental Exposure Levels (WEELs)
US DOE Temporary Emergency Exposure Limits (TEELs)
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US OSHA Permissible Exposure Limits (PELs) Table Z-3
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory
US Toxicology Excellence for Risk Assessment (TERA) Workplace Environmental Exposure Levels (WEEL)

**pentaerythritol is found on the following regulatory lists**

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

**methyl methacrylate is found on the following regulatory lists**

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic
US - California Hazardous Air Pollutants Identified as Toxic Air Contaminants
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Flammables
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Reactive Materials
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US Clean Air Act - Hazardous Air Pollutants
US CWA (Clean Water Act) - List of Hazardous Substances
US DOE Temporary Emergency Exposure Limits (TEELs)
US EPA Integrated Risk Information System (IRIS)
US EPCRA Section 313 Chemical List
US New York City Community Right-to-Know: List of Hazardous Substances
US NIOSH Recommended Exposure Limits (RELs)
US OSHA Permissible Exposure Limits (PELs) Table Z-1
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**2-ethylhexyl acrylate is found on the following regulatory lists**

International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
US - California Proposition 65 - Carcinogens
US - California Safe Drinking Water and Toxic Enforcement Act of 1986 - Proposition 65 List
US - Massachusetts - Right To Know Listed Chemicals
US - New Jersey Right to Know - Special Health Hazard Substance List (SHHSL): Reactive Materials
US - New Jersey Right to Know Hazardous Substances
US - Pennsylvania - Hazardous Substance List
US DOE Temporary Emergency Exposure Limits (TEELs)
US Toxic Substances Control Act (TSCA) - Chemical Substance Inventory

**triisodecyl phosphite is found on the following regulatory lists**

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

**dipropoxy-p-toluidine is found on the following regulatory lists**

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

### Additional Regulatory Information

Not Applicable

### Federal Regulations

### Superfund Amendments and Reauthorization Act of 1986 (SARA)

**Section 311/312 hazard categories**

| | |
|---|---|
| Flammable (Gases, Aerosols, Liquids, or Solids) | Yes |
| Gas under pressure | No |
| Explosive | No |
| Self-heating | No |
| Pyrophoric (Liquid or Solid) | No |
| Pyrophoric Gas | No |

**Continued...**

| | |
|---|---|
| Corrosive to metal | No |
| Oxidizer (Liquid, Solid or Gas) | No |
| Organic Peroxide | No |
| Self-reactive | No |
| In contact with water emits flammable gas | No |
| Combustible Dust | No |
| Carcinogenicity | Yes |
| Acute toxicity (any route of exposure) | No |
| Reproductive toxicity | No |
| Skin Corrosion or Irritation | Yes |
| Respiratory or Skin Sensitization | Yes |
| Serious eye damage or eye irritation | Yes |
| Specific target organ toxicity (single or repeated exposure) | Yes |
| Aspiration Hazard | No |
| Germ cell mutagenicity | Yes |
| Simple Asphyxiant | No |
| Hazards Not Otherwise Classified | No |

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

| Name | Reportable Quantity in Pounds (lb) | Reportable Quantity in kg |
|---|---|---|
| methyl methacrylate | 1000 | 454 |

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

This product contains the following EPCRA section 313 chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know-Act of 1986 (40 CFR 372):

| CAS No | %[weight] | Name |
|---|---|---|
| 80-62-6 | 25-30 | methyl methacrylate |

***This information must be included in all SDSs that are copied and distributed for this material.***

## Additional Federal Regulatory Information

Not Applicable

## State Regulations

**US. California Proposition 65**

⚠ **WARNING:** This product can expose you to chemicals including **titanium dioxide, 2-ethylhexyl acrylate**, which are known to the State of California to cause cancer. For more information, go to www.P65Warnings.ca.gov

Not Applicable

## National Inventory Status

| National Inventory | Status |
|---|---|
| Australia - AIIC / Australia Non-Industrial Use | Yes |
| Canada - DSL | Yes |
| Canada - NDSL | No (talc; ammonium polyphosphate; melamine; pentaerythritol; methyl methacrylate; 2-ethylhexyl acrylate; triisodecyl phosphite; dipropoxy-p-toluidine) |
| China - IECSC | Yes |
| Europe - EINEC / ELINCS / NLP | Yes |
| Japan - ENCS | No (talc) |
| Korea - KECI | Yes |
| New Zealand - NZIoC | Yes |
| Philippines - PICCS | Yes |
| USA - TSCA | All chemical substances in this product have been designated as TSCA Inventory 'Active' |
| Taiwan - TCSI | Yes |
| Mexico - INSQ | No (ammonium polyphosphate; triisodecyl phosphite; dipropoxy-p-toluidine) |
| Vietnam - NCI | Yes |
| Russia - FBEPH | No (dipropoxy-p-toluidine) |
| UAE - Control List (Banned/Restricted Substances) | No (titanium dioxide; talc; melamine; pentaerythritol; methyl methacrylate; 2-ethylhexyl acrylate; triisodecyl phosphite; dipropoxy-p-toluidine) |
| ***Legend:*** | ***Yes = All CAS declared ingredients are on the inventory***<br>***No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.*** |

**Continued...**

## SECTION 16 Other information

| | |
|---|---|
| **Revision Date** | 21/10/2025 |
| **Initial Date** | 14/01/2025 |

**SDS Version Summary**

| Version | Date of Update | Sections Updated |
|---|---|---|
| 0.7 | 21/10/2025 | Hazards identification - Classification, Composition / information on ingredients - Ingredients, Identification of the substance / mixture and of the company / undertaking - Synonyms |

**Other information**

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

**Definitions and abbreviations**

- PC—TWA: Permissible Concentration-Time Weighted Average
- PC—STEL: Permissible Concentration-Short Term Exposure Limit
- IARC: International Agency for Research on Cancer
- ACGIH: American Conference of Governmental Industrial Hygienists
- STEL: Short Term Exposure Limit
- TEEL: Temporary Emergency Exposure Limit。
- IDLH: Immediately Dangerous to Life or Health Concentrations
- ES: Exposure Standard
- OSF: Odour Safety Factor
- NOAEL: No Observed Adverse Effect Level
- LOAEL: Lowest Observed Adverse Effect Level
- TLV: Threshold Limit Value
- LOD: Limit Of Detection
- OTV: Odour Threshold Value
- BCF: BioConcentration Factors
- BEI: Biological Exposure Index
- DNEL: Derived No-Effect Level
- PNEC: Predicted no-effect concentration
- MARPOL: International Convention for the Prevention of Pollution from Ships
- IMSBC: International Maritime Solid Bulk Cargoes Code
- IGC: International Gas Carrier Code
- IBC: International Bulk Chemical Code

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

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**end of SDS**