



Kaleidochrome Long & Durable(TM) - White Paint

Product review by Chemwatch

Version No: 0.4

Safety Data Sheet according to WHS Regulations (Hazardous Chemicals) Amendment 2020 and ADG requirements

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SECTION 1 IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

Product Identifier

Product name	Kaleidochrome Long & Durable(TM) - White Paint
Synonyms	Not Available
Other means of identification	Not Available

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

Relevant identified uses	<p>The isothiazolinones all exhibit antimicrobial properties. They are used to control bacteria, fungi, and algae in cooling water systems, fuel storage tanks, pulp and paper mill water systems, oil extraction systems, wood preservation, and some paints. They are antifouling agents. They are frequently used in shampoos and other hair care products.</p> <p>Chloromethylisothiazolinone (CMIT) and 2-methyl-4-isothiazolin-3-one (methylisothiazolinone or MIT) are popular derivatives. A 3:1 mixture of CMIT:MIT is sold as Kathon. Kathon is supplied as a concentrated stock solution containing from 1.5–15% of CMIT/MIT. For applications the recommended use level is from 6 ppm to 75 ppm active isothiazolinones.</p> <p>4,5-Dichloro-2-n-octyl-4-isothiazolino-3-one (DCOI or Sea-Nine 211) is used especially as an antifouling agent, i.e. paint for ship hulls to prevent the formation of barnacles, etc.</p> <p>Together with their wanted function, controlling or killing microorganisms, isothiazolinones also have undesirable effects. Isothiazolinones are now being looked upon as the next DDT. Their undesirable effects outweigh their benefits. Many countries are looking at partial or full bans of the substance due to the known dangers in using the biocide.</p> <p>Biocide.</p> <p>Intended to destroy, deter, render harmless, or exert a controlling effect on any harmful organism by chemical or biological means. Biocides can be added to other materials (typically liquids) to protect them against biological infestation and growth.</p> <p>The EU regulatory framework for biocides has for years been defined by the Directive 98/8/EC, also known as the Biocidal Products Directive (BPD). The BPD was revoked by the Biocidal Products Regulation 528/2012 (BPR), which entered into force on 17 July 2012 with the application date of September 1, 2013. Several Technical Notes for Guidance (TNsG) have been developed to facilitate the implementation of the BPR and to assure a common understanding of its obligations. According to the EU legislation, biocidal products need authorisation to be placed or to remain on the market. Competent Authorities of the EU member states are responsible for assessing and approving the active substances contained in the biocides. The BPR follows some of the principles set previously under the REACH Regulation (Registration, Evaluation, Authorisation and Restrictions of Chemicals) and the coordination of the risk assessment process for both REACH and BPR are mandated to the European Chemicals Agency (ECHA), which assures the harmonization and integration of risk characterization methodologies between the two regulations.</p> <p>The biocides legislation puts emphasis on making the Regulation compatible with the World Trade Organisation (WTO) rules and requirements and with the Global Harmonised System for Classification and Labelling (GHS), as well as with the OECD programme on testing methods. Exchange of information requires the use of the OECD harmonised templates implemented in IUCLID – the International Unified Chemical Information Data System (see ECHA and OECD websites).</p> <p>Many biocides in the US are regulated under the Federal Pesticide Law (FIFRA) and its subsequent amendments, although some fall under the Federal Food, Drugs and Cosmetic Act, which includes plant protection products.</p> <p>In Europe, the plant protection products are placed on the market under another regulatory framework, managed by the European Food Safety Authority (EFSA).</p>
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Details of the manufacturer or supplier of the safety data sheet

Registered company name	Product review by Chemwatch
Address	Australia
Telephone	Not Available
Fax	Not Available
Website	Not Available
Email	Not Available

Emergency telephone number

Association / Organisation	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	+61 1800 951 288
Other emergency telephone numbers	+61 3 9573 3188

SECTION 2 HAZARDS IDENTIFICATION

Classification of the substance or mixture

Poisons Schedule	Not Applicable
Classification ^[1]	Gases Under Pressure (Compressed Gas), Skin Corrosion/Irritation Category 1B, Sensitisation (Skin) Category 1, Serious Eye Damage/Eye Irritation Category 1, Acute Toxicity (Inhalation) Category 4, Sensitisation (Respiratory) Category 1, Specific Target Organ Toxicity - Single Exposure (Respiratory Tract Irritation) Category 3, Specific Target Organ Toxicity - Single Exposure (Narcotic Effects) Category 3, Germ Cell Mutagenicity Category 2, Carcinogenicity Category 1A, Hazardous to the Aquatic Environment Acute Hazard Category 2
Legend:	1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI

Label elements

Hazard pictogram(s)	
SIGNAL WORD	DANGER

Hazard statement(s)

H280	Contains gas under pressure; may explode if heated.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H335	May cause respiratory irritation.
H336	May cause drowsiness or dizziness.
H341	Suspected of causing genetic defects.
H350	May cause cancer.
H401	Toxic to aquatic life.

Precautionary statement(s) Prevention

P201	Obtain special instructions before use.
P260	Do not breathe gas.
P264	Wash all exposed external body areas thoroughly after handling.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves, protective clothing, eye protection and face protection.
P284	[In case of inadequate ventilation] wear respiratory protection.
P273	Avoid release to the environment.
P272	Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313	IF exposed or concerned: Get medical advice/ attention.
P310	Immediately call a POISON CENTER/doctor/physician/first aider.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor/physician/first aider.
P302+P352	IF ON SKIN: Wash with plenty of water.
P363	Wash contaminated clothing before reuse.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P362+P364	Take off contaminated clothing and wash it before reuse.

Precautionary statement(s) Storage

P405	Store locked up.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.

Precautionary statement(s) Disposal

P501	Dispose of contents/container to authorised hazardous or special waste collection point in accordance with any local regulation.
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SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances

See section below for composition of Mixtures

Mixtures

CAS No	%[weight]	Name
67-64-1	50	acetone
13463-67-7	40	titanium dioxide
26172-54-3	10	2-methyl-2H-isothiazol-3-one hydrochloride

Legend: 1. Classified by Chemwatch; 2. Classification drawn from HCIS; 3. Classification drawn from Regulation (EU) No 1272/2008 - Annex VI; 4. Classification drawn from C&L;
* EU IOELVs available

SECTION 4 FIRST AID MEASURES

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.• Prostheses such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.• 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">• For advice, contact a Poisons Information Centre or a doctor at once.• Urgent hospital treatment is likely to be needed.• If swallowed do NOT induce vomiting.• If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.• Observe the patient carefully.• Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.• Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.• Transport to hospital or doctor without delay.• If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

Indication of any immediate medical attention and special treatment needed

Any material aspirated during vomiting may produce lung injury. Therefore emesis should not be induced mechanically or pharmacologically. Mechanical means should be used if it is considered necessary to evacuate the stomach contents; these include gastric lavage after endotracheal intubation. If spontaneous vomiting has occurred after ingestion, the patient should be monitored for difficult breathing, as adverse effects of aspiration into the lungs may be delayed up to 48 hours.

Treat symptomatically.

For acute or short term repeated exposures to acetone:

- Symptoms of acetone exposure approximate ethanol intoxication.
- About 20% is expired by the lungs and the rest is metabolised. Alveolar air half-life is about 4 hours following two hour inhalation at levels near the Exposure Standard; in overdose, saturable metabolism and limited clearance, prolong the elimination half-life to 25-30 hours.
- There are no known antidotes and treatment should involve the usual methods of decontamination followed by supportive care.

[Ellenhorn and Barceloux: Medical Toxicology]

Management:

Measurement of serum and urine acetone concentrations may be useful to monitor the severity of ingestion or inhalation.

Inhalation Management:

- Maintain a clear airway, give humidified oxygen and ventilate if necessary.
- If respiratory irritation occurs, assess respiratory function and, if necessary, perform chest X-rays to check for chemical pneumonitis.
- Consider the use of steroids to reduce the inflammatory response.
- Treat pulmonary oedema with PEEP or CPAP ventilation.

Dermal Management:

- Remove any remaining contaminated clothing, place in double sealed, clear bags, label and store in secure area away from patients and staff.
- Irrigate with copious amounts of water.
- An emollient may be required.

Eye Management:

- Irrigate thoroughly with running water or saline for 15 minutes.
- Stain with fluorescein and refer to an ophthalmologist if there is any uptake of the stain.

Oral Management:

- No **GASTRIC LAVAGE OR EMETIC**
- Encourage oral fluids.

Systemic Management:

- Monitor blood glucose and arterial pH.
- Ventilate if respiratory depression occurs.
- If patient unconscious, monitor renal function.
- Symptomatic and supportive care.

The Chemical Incident Management Handbook:

Guy's and St. Thomas' Hospital Trust, 2000

BIOLOGICAL EXPOSURE INDEX

These represent the determinants observed in specimens collected from a healthy worker exposed at the Exposure Standard (ES or TLV):

Determinant	Sampling Time	Index	Comments
Acetone in urine	End of shift	50 mg/L	NS

NS: Non-specific determinant; also observed after exposure to other material

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media

- Alcohol stable foam.
- Dry chemical powder.
- BCF (where regulations permit).
- Carbon dioxide.
- Water spray or fog - Large fires only.

Special hazards arising from the substrate or mixture

Fire Incompatibility	<ul style="list-style-type: none">• Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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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.• Prevent, by any means available, spillage from entering drains or water courses.• Use water delivered as a fine spray to control fire and cool adjacent area.• DO NOT approach containers suspected to be hot.
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	<ul style="list-style-type: none"> • 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	<p>WARNING: In use may form flammable/ explosive vapour-air mixtures.</p> <p>Combustible. Will burn if ignited.</p> <p>Combustion products include:</p> <p>carbon monoxide (CO)</p> <p>carbon dioxide (CO₂)</p> <p>metal oxides</p> <p>other pyrolysis products typical of burning organic material.</p> <p>May emit poisonous fumes.</p> <p>May emit corrosive fumes.</p>
HAZCHEM	Not Applicable

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	<ul style="list-style-type: none"> • Clean up all spills immediately. • Avoid breathing vapours/ aerosols/ or dusts and avoid contact with skin and eyes. • Control personal contact with the substance, by using protective equipment. • Contain and absorb spill with sand, earth, inert material or vermiculite. • Place in a suitable, labelled container for waste disposal.
Major Spills	<ul style="list-style-type: none"> • Absorb or contain isothiazolinone liquid spills with sand, earth, inert material or vermiculite. • The absorbent (and surface soil to a depth sufficient to remove all of the biocide) should be shovelled into a drum and treated with an 11% solution of sodium metabisulfite (Na₂S₂O₅) or sodium bisulfite (NaHSO₃), or 12% sodium sulfite (Na₂SO₃) and 8% hydrochloric acid (HCl). • Glutathione has also been used to inactivate the isothiazolinones. • Use 20 volumes of decontaminating solution for each volume of biocide, and let containers stand for at least 30 minutes to deactivate microbicide before disposal. • If contamination of drains or waterways occurs, advise emergency services. • After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.

Reference to other sections

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

SECTION 7 HANDLING AND STORAGE

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.
Other information	

Conditions for safe storage, including any incompatibilities

Suitable container	<ul style="list-style-type: none"> • Polyethylene or polypropylene container. • Packing as recommended by manufacturer. • Check all containers are clearly labelled and free from leaks.
Storage incompatibility	<p>Titanium dioxide</p> <ul style="list-style-type: none"> • 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 <i>transition metal</i> peroxides should be considered as potentially explosive. For example transition metal complexes of alkyl hydroperoxides may decompose explosively. • The pi-complexes formed between chromium(0), vanadium(0) and other transition metals (haloarene-metal complexes) and mono-or poly-fluorobenzene show extreme sensitivity to heat and are explosive. • Avoid reaction with borohydrides or cyanoborohydrides <p>Acetone:</p> <ul style="list-style-type: none"> • may react violently with a variety of substances, including but not limited to activated carbon, halogenated compounds, perchlorates, chromic acids, liquid oxygen and strong acids. • will react violently with bromoform and chloroform when in contact with alkaline substances • may form unstable and explosive peroxides when in contact with strong oxidisers, fluorine, hydrogen peroxide (90%), sodium perchlorate, or 2-methyl-1,3-butadiene • can make nitromethane more explosive • will dissolve most rubbers, resins and plastics <p>Ketones in this group:</p>

- are reactive with many acids and bases liberating heat and flammable gases (e.g., H₂).
- react with reducing agents such as hydrides, alkali metals, and nitrides to produce flammable gas (H₂) and heat.
- are incompatible with isocyanates, aldehydes, cyanides, peroxides, and anhydrides.
- react violently with aldehydes, HNO₃ (nitric acid), HNO₃ + H₂O₂ (mixture of nitric acid and hydrogen peroxide), and HClO₄ (perchloric acid).
- may react with hydrogen peroxide to form unstable peroxides; many are heat- and shock-sensitive explosives.

A significant property of most ketones is that the hydrogen atoms on the carbons next to the carbonyl group are relatively acidic when compared to hydrogen atoms in typical hydrocarbons. Under strongly basic conditions these hydrogen atoms may be abstracted to form an enolate anion. This property allows ketones, especially methyl ketones, to participate in condensation reactions with other ketones and aldehydes. This type of condensation reaction is favoured by high substrate concentrations and high pH (greater than 1 wt% NaOH).

- Avoid reaction with oxidising agents

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

OCCUPATIONAL EXPOSURE LIMITS (OEL)

INGREDIENT DATA





Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Australia Exposure Standards	acetone	Acetone	500 ppm / 1185 mg/m3	2375 mg/m3 / 1000 ppm	Not Available	Not Available
Australia Exposure Standards	titanium dioxide	Titanium dioxide	10 mg/m3	Not Available	Not Available	(a) This value is for inhalable dust containing no asbestos and < 1% crystalline silica.

EMERGENCY LIMITS

Ingredient	TEEL-1	TEEL-2	TEEL-3
acetone	Not Available	Not Available	Not Available
titanium dioxide	30 mg/m3	330 mg/m3	2,000 mg/m3

Ingredient	Original IDLH	Revised IDLH
acetone	2,500 ppm	Not Available
titanium dioxide	5,000 mg/m3	Not Available
2-methyl-2H-isothiazol-3-one hydrochloride	Not Available	Not Available

Exposure controls

Appropriate engineering controls	<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.</p> <p>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.</p> <p>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>	
	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.)	
<p>Within each range the appropriate value depends on:</p>		
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>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>		
Individual protection measures, such as personal protective equipment	<div></div>	

Eye and face protection	<ul style="list-style-type: none">• Chemical goggles.• Full face shield may be required for supplementary but never for primary protection of eyes.• 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], [AS/NZS 1336 or national equivalent]
Skin protection	See Hand protection below
Hands/feet protection	<ul style="list-style-type: none">• Wear chemical protective gloves, e.g. PVC.• Wear safety footwear or safety gumboots, e.g. Rubber NOTE: <ul style="list-style-type: none">• 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.• Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.• Butyl rubber gloves• Nitrile rubber gloves (Note: Nitric acid penetrates nitrile gloves in a few minutes.)
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

Type AX 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 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

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Appearance	Not Available		
Physical state	Compressed Gas	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 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)	Not Available	Taste	Not Available
Evaporation rate	Not Available	Explosive properties	Not Available
Flammability	Not Available	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	Miscible	pH as a solution (1%)	Not Available
Vapour density (Air = 1)	Not Available	VOC g/L	Not Available

SECTION 10 STABILITY AND REACTIVITY

Reactivity	See section 7
Chemical stability	Product is considered stable and hazardous polymerisation will not occur.
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

Inhaled	The material can cause respiratory irritation in some persons. The body's response to such irritation can cause further lung damage. Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by sleepiness, reduced alertness, loss of reflexes, lack of co-ordination, and vertigo.
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	<p>Ketone vapours irritate the nose, throat and mucous membrane. High concentrations depress the central nervous system, causing headache, vertigo, poor concentration, sleep and failure of the heart and breathing.</p> <p>Effects of exposure to acetone by inhalation include central nervous system depression, light-headedness, unintelligible speech, inco-ordination, stupor, low blood pressure, fast heart rate, metabolic acidosis, high blood sugar and ketosis. Rarely, there may be convulsions and death of kidney tubules.</p> <p>Inhalation of dusts, generated by the material, during the course of normal handling, may be harmful.</p>																
Ingestion	<p>The material can produce chemical burns within the oral cavity and gastrointestinal tract following ingestion.</p> <p>The material is not thought to produce adverse health effects following ingestion (as classified by EC Directives using animal models).</p> <p>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.</p> <p>Taken by mouth, isothiazolinones have moderate to high toxicity. The major signs of toxicity are severe stomach irritation, lethargy, and inco-ordination.</p> <p>Dusts of titanium and titanium compounds are thought to exhibit little or no toxic effects.</p> <p>Swallowing of the liquid may cause aspiration into the lungs with the risk of chemical pneumonitis; serious consequences may result. (ICSC13733)</p> <p>Accidental ingestion of the material may be damaging to the health of the individual.</p>																
Skin Contact	<p>The material can produce chemical burns following direct contact with the skin.</p> <p>Skin contact with the material may damage the health of the individual; systemic effects may result following absorption.</p> <p>Solutions of isothiazolinones may be irritating or even damaging to the skin, depending on concentration. A concentration of over 0.1% can irritate, and over 0.5% can cause severe irritation.</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>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>																
Eye	<p>The material can produce chemical burns to the eye following direct contact. Vapours or mists may be extremely irritating.</p> <p>If applied to the eyes, this material causes severe eye damage.</p> <p>Solutions containing isothiazolinones may damage the mucous membranes and cornea. Animal testing showed very low concentrations (under 0.1%) did not cause irritation, while higher levels (3-5.5%) produced severe irritation and damage to the eye.</p>																
Chronic	<p>Studies show that inhaling this substance for over a long period (e.g. in an occupational setting) may increase the risk of cancer.</p> <p>Long-term exposure to respiratory irritants may result in airways disease, involving difficulty breathing and related whole-body problems.</p> <p>Strong evidence exists that this substance may cause irreversible mutations (though not lethal) even following a single exposure.</p> <p>Inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Skin contact with the material is more likely to cause a sensitisation reaction in some persons compared to the general population.</p> <p>Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed.</p> <p>This material can cause serious damage if one is exposed to it for long periods. It can be assumed that it contains a substance which can produce severe defects.</p> <p>Ample evidence from experiments exists that there is a suspicion this material directly reduces fertility.</p> <p>Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.</p> <p>The isothiazolinones are known contact sensitisers. Sensitisation is more likely with the chlorinated species as opposed to the non-chlorinated species.</p> <p>Long term exposure to titanium and several of its compounds produces lung scarring and chronic bronchitis. Breathing is impaired and cardiac changes with right heart enlargements occur.</p> <p>Workers exposed to acetone for long periods showed inflammation of the airways, stomach and small bowel, attacks of giddiness and loss of strength. Exposure to acetone may enhance the liver toxicity of chlorinated solvents.</p> <p>Prolonged or repeated skin contact may cause drying with cracking, irritation and possible dermatitis following.</p>																
Kaleidochrome Long & Durable(TM) - White Paint	<table><tr><th>TOXICITY</th><th>IRRITATION</th></tr><tr><td>Not Available</td><td>Not Available</td></tr></table>	TOXICITY	IRRITATION	Not Available	Not Available												
TOXICITY	IRRITATION																
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Legend:	<p>1. Value obtained from Europe ECHA Registered Substances - Acute toxicity</p> <p>2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances</p>																
Kaleidochrome Long & Durable(TM) - White Paint	<p>Allergic reactions involving the respiratory tract are usually due to interactions between IgE antibodies and allergens and occur rapidly. Allergic potential of the allergen and period of exposure often determine the severity of symptoms. Some people may be genetically more prone than others, and exposure to other irritants may aggravate symptoms. Allergy causing activity is due to interactions with proteins.</p> <p>Attention should be paid to atopic diathesis, characterised by increased susceptibility to nasal inflammation, asthma and eczema.</p> <p>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.</p> <p>The following information refers to contact allergens as a group and may not be specific to this product.</p> <p>Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one with stronger sensitising potential with which few individuals come into contact. From a clinical point of view, substances are noteworthy if they produce an allergic test reaction in more than 1% of the persons tested.</p>																

titanium dioxide	<p>* IUCLID No significant acute toxicological data identified in literature search.</p> <p>The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.</p> <p>WARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.</p>		
Kaleidochrome Long & Durable(TM) - White Paint & acetone	<p>For acetone:</p> <p>The acute toxicity of acetone is low. Acetone is not a skin irritant or sensitizer, but it removes fat from the skin, and it also irritates the eye. Animal testing shows acetone may cause anaemia. Studies in humans have shown that exposure to acetone at a level of 2375 mg/m3 does not negatively impact an individual's emotional regulation, behaviour, or learning ability.</p>		
acetone & titanium dioxide	<p>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.</p>		
Kaleidochrome Long & Durable(TM) - White Paint & titanium dioxide	<p>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.</p> <p>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. Main criteria for diagnosing RADS include the absence of previous airways disease in a non-atopic individual, with sudden onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. Other criteria for diagnosis of RADS include a reversible airflow pattern on lung function tests, moderate to severe bronchial hyperreactivity on methacholine challenge testing, and the lack of minimal lymphocytic inflammation, without eosinophilia. RADS (or asthma) following an irritating inhalation is an infrequent disorder with rates related to the concentration of and duration of exposure to the irritating substance. On the other hand, industrial bronchitis is a disorder that occurs as a result of exposure due to high concentrations of irritating substance (often particles) and is completely reversible after exposure ceases. The disorder is characterized by difficulty breathing, cough and mucus production.</p> <p>Exposure to titanium dioxide is via inhalation, swallowing or skin contact. When inhaled, it may deposit in lung tissue and lymph nodes causing dysfunction of the lungs and immune system. Absorption by the stomach and intestines depends on the size of the particle. It penetrated only the outermost layer of the skin, suggesting that healthy skin may be an effective barrier. There is no substantive data on genetic damage, though cases have been reported in experimental animals. Studies have differing conclusions on its cancer-causing potential.</p>		
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

Toxicity

Kaleidochrome Long & Durable(TM) - White Paint	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	Not Available	Not Available	Not Available	Not Available	Not Available
acetone	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96h	Fish	3744.6-5000.7mg/L	4
	NOEC(ECx)	12h	Fish	0.001mg/L	4
	EC50	72h	Algae or other aquatic plants	5600-10000mg/l	4
	EC50	48h	Crustacea	6098.4mg/L	5
	EC50	96h	Algae or other aquatic plants	9.873-27.684mg/l	4
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
	EC50	96h	Algae or other aquatic plants	179.05mg/l	2
	LC50	96h	Fish	1.85-3.06mg/l	4
	NOEC(ECx)	672h	Fish	>=0.004mg/L	2
2-methyl-2H-isothiazol-3-one hydrochloride	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	72h	Algae or other aquatic plants	0.289mg/l	2
	EC50	48h	Crustacea	2.33mg/l	2
	NOEC(ECx)	72h	Algae or other aquatic plants	0.047mg/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				

Toxic 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.

Wastes resulting from use of the product must be disposed of on site or at approved waste sites.

For Ketones: Ketones, unless they are alpha, beta--unsaturated ketones, can be considered as narcosis or baseline toxicity compounds.

Aquatic Fate: Hydrolysis of ketones in water is thermodynamically favourable only for low molecular weight ketones. Reactions with water are reversible with no permanent change in the structure of the ketone substrate. Ketones are stable to water under ambient environmental conditions. When pH levels are greater than 10, condensation reactions can occur which produce higher molecular weight products. Under ambient conditions of temperature, pH, and low concentration, these condensation reactions are unfavourable. Based on its reactions in air, it seems likely that ketones undergo photolysis in water.

Terrestrial Fate: It is probable that ketones will be biodegraded by micro-organisms in soil and water.

Ecotoxicity: Ketones are unlikely to bioconcentrate or biomagnify.

Environmental Fate: Isothiazolinones are antimicrobials used to control bacteria, fungi, and for wood preservation and antifouling agents. They are frequently used in personal care products such as shampoos and other hair care products, as well as certain paint formulations. The most common isothiazolinone combinations are 5-chloro-2-methyl-4-isothiazolin-3-one, (CMI), and 2-methyl-4-isothiazolin-3-one, (MI).

Aquatic Fate: 5-chloro-2-methyl-4-isothiazolin-3-one,(CMI), and 2-methyl-4-isothiazolin-3-one, (MI), undergo primary biological breakdown with half-lives of less than 24 hours in both

oxygenated and low oxygen sediments with >55% breakdown occurring within 29 days.
Ecotoxicity: The isothiazolinones are very toxic to marine organisms, (fish, Daphnia magna water fleas, and algae), and have low potential for accumulation in aquatic species. The proposed metabolites of MI and CMI are considered to have a low aquatic toxicity, based partially on data for the structurally related N-(n-octyl) malonamic acid.

For Acetone:
log Kow : -0.24;
Half-life (hr) air : 312-1896;
Half-life (hr) H2O surface water : 20;
Henry's atm m3 /mol : 3.67E-05
BOD 5: 0.31-1.76,46-55%
COD: 1.12-2.07
ThOD: 2.2BCF: 0.69.

Environmental Fate: The relatively long half-life allows acetone to be transported long distances from its emission source.
Atmospheric Fate: Acetone preferentially locates in the air compartment when released to the environment. In air, acetone is lost by photolysis and reaction with photochemically produced hydroxyl radicals; the estimated half-life of these combined processes is about 22 days. Air Quality Standards: none available.
Terrestrial Fate: Very little acetone is expected to reside in soil, biota, or suspended solids and has low propensity for soil absorption and a high preference for moving through the soil and into the ground water. Acetone released to soil volatilizes although some may leach into the ground where it rapidly biodegrades. Soil Guidelines: none available.
Aquatic Fate: A substantial amount of acetone can also be found in water. Acetone is highly soluble and slightly persistent in water, with a half-life of about 20 hours Drinking Water Standard: none available.
Ecotoxicity: Acetone does not concentrate in the food chain, is minimally toxic to aquatic life and is considered to be readily biodegradable. Testing shows that acetone exhibits a low order of toxicity for brook trout, fathead minnow, Japanese quail, ring-neck pheasant and water fleas. Low toxicity for aquatic invertebrates. For aquatic plants, NOEC: 5400-7500 mg/L. Acetone vapours were shown to be relatively toxic to flour beetle and flour moths and their eggs. The direct application of acetone liquid to the body of the insects or surface of the eggs did not, however, cause any mortality. The ability of acetone to inhibit cell multiplication has been examined in a wide variety of microorganisms. Mild to moderate toxicity occurred in bacteria exposed to acetone for 6-4 days however, overall data indicates a low degree of toxicity for acetone. The only exception to these findings was the results obtained with the flagellated protozoa (Entosiphon sulcatum).
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
acetone	LOW (Half-life = 14 days)	MEDIUM (Half-life = 116.25 days)
titanium dioxide	HIGH	HIGH

Bioaccumulative potential

Ingredient	Bioaccumulation
acetone	LOW (BCF = 0.69)
titanium dioxide	LOW (BCF = 10)

Mobility in soil

Ingredient	Mobility
acetone	HIGH (KOC = 1.981)
titanium dioxide	LOW (KOC = 23.74)

SECTION 13 DISPOSAL CONSIDERATIONS

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.• Recycle wherever possible or consult manufacturer for recycling options.• Consult State Land Waste Authority for disposal.• Bury or incinerate residue at an approved site.• Recycle containers if possible, or dispose of in an authorised landfill.
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SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant	NO
HAZCHEM	Not Applicable

Land transport (ADG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

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

Not Applicable

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

Product name	Group
acetone	Not Available
titanium dioxide	Not Available

Product name	Group
2-methyl-2H-isothiazol-3-one hydrochloride	Not Available

14.9. Transport in bulk in accordance with the IGC Code

Product name	Ship Type
acetone	Not Available
titanium dioxide	Not Available
2-methyl-2H-isothiazol-3-one hydrochloride	Not Available

SECTION 15 REGULATORY INFORMATION

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

ACETONE IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Australian Inventory of Industrial Chemicals (AIIC)
- Australia Illicit Drug Reagents/Essential Chemicals - Category III
- Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 5
- Australia Dangerous Goods Code (ADG Code) - Dangerous Goods List
- Australia Customs (Prohibited Exports) Regulations 1958 - Schedule 9 Precursor substances - Part 2
- Australia Crimes (Traffic in Narcotic Drugs and Psychotropic Substances) Act - Schedule 1 - United Nations Convention Against Illicit Traffic In Narcotic Drugs And Psychotropic Substances - Table II
- Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
- United Nations Convention Against Illicit Traffic in Narcotic Drugs and Psychotropic Substances - Table II
- International Maritime Dangerous Goods Requirements (IMDG Code)
- Whole Foods Market Banned Body Care Ingredients (Corporate List)
- Whole Foods Market Premium Body Care Unacceptable Ingredients (Corporate List)
- United Nations Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments
- United Nations List of Precursors and Chemicals Frequently used in the Illicit Manufacture of Narcotic Drugs and Psychotropic Substances Under International Control (Red List) - Table II
- Renault Prohibited or Restricted Substances - Annex 1: List (Corporate List)

TITANIUM DIOXIDE IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Australian Inventory of Industrial Chemicals (AIIC)
- Australia Australian Pesticides and Veterinary Medicines Authority (APVM) Record of approved active constituents
- Australia AICIS List of chemicals with high hazards for categorisation
- Electrolux Restricted Materials List (RML) - Miscellaneous substances of concern (Corporate List)
- International WHO List of Proposed Occupational Exposure Limit (OEL) Values for Manufactured Nanomaterials (MNMS)
- Chemical Footprint Project - Chemicals of High Concern List
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 2B: Possibly carcinogenic to humans
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
- Electrolux Restricted Materials List (RML) - CMR 2 (Carcinogenic, Mutagenic, Reproduction toxic substances, formerly CMR 3) (Corporate List)

2-METHYL-2H-ISOTHIAZOL-3-ONE HYDROCHLORIDE IS FOUND ON THE FOLLOWING REGULATORY LISTS

- Australian Inventory of Industrial Chemicals (AIIC)
- Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals

National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (acetone)
China - IECSC	Yes
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Taiwan - TCSI	Yes
Mexico - INSQ	Yes
Vietnam - NCI	Yes
Russia - FBEPH	Yes
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	08/03/2024
Initial Date	08/03/2024

Version	Issue Date	Sections Updated
0.4	08/03/2024	Toxicological information - Chronic Health, First Aid measures - Advice to Doctor, Exposure controls / personal protection - Exposure Standard, Ecological Information - Environmental, Toxicological information - Acute Health (swallowed), Toxicological information - Acute Health (eye), Toxicological information - Acute Health (skin), Toxicological information - Acute Health (inhaled), First Aid measures - First Aid (swallowed), Handling and storage - Storage (suitable container), Handling and storage - Storage (storage incompatibility), Firefighting measures - Fire Fighter (fire/explosion hazard), Exposure controls / personal protection - Personal Protection (eye), Exposure controls / personal protection - Personal Protection (hands/feet), Composition / information on ingredients - Ingredients, Physical and chemical properties - Physical Properties, Hazards identification - Classification

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 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.

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