Safety Data Sheet

Hazardous Substance, Dangerous Goods

1. MATERIAL AND SUPPLY COMPANY IDENTIFICATION

Product name: RHINOFLOOR CRE (Pack A)
Supplier: Wagon Paints Australia Pty Ltd
ABN: 76 412 791 772
Street Address: 5 Stephenson Road Bayswater North VIC 3153 Australia
Telephone: +613 9729-1344
Facsimile: +613 9720 2179
Emergency Telephone number: (03) 9729 1344 from 8:00 am to 4:30 pm

SECTION 2 HAZARDS IDENTIFICATION

SIGNAL WORDWARNING

Hazard statement(s)

H302 Harmful if swallowed.
H312 Harmful in contact with skin.
H332 Harmful if inhaled.
H315 Causes skin irritation.

H319 Causes serious eye irritation.
H317 May cause an allergic skin reaction.
H351 Suspected of causing cancer.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statement(s) Prevention

P201 Obtain special instructions before use.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P281 Use personal protective equipment as required.
P261 Avoid breathing mist/vapours/spray.
P270 Do not eat, drink or smoke when using this product.
P273 Avoid release to the environment.
P272 Contaminated work clothing should not be allowed out of the workplace.

Precautionary statement(s) Response

P308+P313IF exposed or concerned: Get medical advice/attention.
P362 Take off contaminated clothing and wash before reuse.
P302+P352IF ON SKIN: Wash with plenty of soap and water.
P305+P351+P338IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
P337+P313 If eye irritation persists: Get medical advice/attention.
P391 Collect spillage.
P301+P312IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P304+P340IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P330 Rinse mouth.

Precautionary statement(s) Storage

P405 Store locked up.

Precautionary statement(s) Disposal

P501 Dispose of contents/container in accordance with local regulations.

SECTION 3 COMPOSITION / INFORMATION ON INGREDIENTS

Substances
See section below for composition of Mixtures

Mixtures
CAS No%[weight]Name
9003-36-530-60phenol/ formaldehyde/ epichlorohydrin copolymer
residual reactant, as
13463-67-710-30titanium dioxide
65997-17-310-25glass, oxide
106-89-8<1epichlorohydrin
1333-86-4<0.5carbon black
Not Available0-1additives, unregulated

SECTION 4 FIRST AID MEASURES

Description of first aid measures
If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
- **Eye Contact**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.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear.

Skin Contact
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.
- 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.

Inhalation
- 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.
- **IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.**
- For advice, contact a Poisons Information Centre or a doctor.
- Urgent hospital treatment is likely to be needed.
- In the mean time, qualified first-aid personnel should treat the patient following observation and employing supportive measures as indicated by the patient's condition.
- If the services of a medical officer or medical doctor are readily available, the patient should be placed in his/her care and a copy of the SDS should be provided. Further action will be the responsibility of the medical specialist.
- If medical attention is not available on the worksite or surroundings send the patient to a hospital together with a copy of the SDS.

Ingestion
Where medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:
- **INDUCE** vomiting with fingers down the back of the throat, **ONLY IF CONSCIOUS**. Lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.

NOTE: Wear a protective glove when inducing vomiting by mechanical means.

Indication of any immediate medical attention and special treatment needed
As in all cases of suspected poisoning, follow the ABCDEs of emergency medicine (airway, breathing, circulation, disability, exposure), then the ABCDEs of toxicology (antidotes, basics, change absorption, change distribution, change elimination).
For poisons (where specific treatment regime is absent):

BASIC TREATMENT

- Establish a patent airway with suction where necessary.
- Watch for signs of respiratory insufficiency and assist ventilation as necessary.
- Administer oxygen by non-rebreather mask at 10 to 15 L/min.
- Monitor and treat, where necessary, for pulmonary oedema.
- Monitor and treat, where necessary, for shock.
- Anticipate seizures.
- **DO NOT** use emetics. Where ingestion is suspected rinse mouth and give up to 200 ml water (5 ml/kg recommended) for dilution where patient is able to swallow, has a strong gag reflex and does not drool.

ADVANCED TREATMENT

- Consider orotracheal or nasotracheal intubation for airway control in unconscious patient or where respiratory arrest has occurred.
- Positive-pressure ventilation using a bag-valve mask might be of use.
- Monitor and treat, where necessary, for arrhythmias.

- Start an IV D5W TKO. If signs of hypovolaemia are present use lactated Ringers solution. Fluid overload might create complications.
- Drug therapy should be considered for pulmonary oedema.
- Hypotension with signs of hypovolaemia requires the cautious administration of fluids. Fluid overload might create complications.
- Treat seizures with diazepam.
- Proparacaine hydrochloride should be used to assist eye irrigation.

BRONSTEIN, A.C. and CURRANCE, P.L.
EMERGENCY CARE FOR HAZARDOUS MATERIALS EXPOSURE: 2nd Ed. 1994
Treat symptomatically.

SECTION 5 FIREFIGHTING MEASURES

Extinguishing media
- 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** Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

Advice for firefighters
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.

Fire Fighting
- Avoid spraying water onto liquid pools.
- **DO NOT** approach containers suspected to be hot.
- Cool fire exposed containers with water spray from a protected location.
- If safe to do so, remove containers from path of fire.
- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).
- May emit acrid smoke.
- Mists containing combustible materials may be explosive.

Combustion products include:

Fire/Explosion Hazard

,

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
Environmental hazard - contain spillage.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- **Minor Spills** Control personal contact with the substance, by using protective equipment.
- Contain and absorb spill with sand, earth, inert material or vermiculite.
- Wipe up.
- Place in a suitable, labelled container for waste disposal.

Environmental hazard - contain spillage.
Moderate hazard.
- Clear area of personnel and move upwind.
- 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 course.
- No smoking, naked lights or ignition sources.
- **Major Spills** Increase ventilation.
- Stop leak if safe to do so.
- Contain spill with sand, earth or vermiculite.
- Collect recoverable product into labelled containers for recycling.
- Absorb remaining product with sand, earth or vermiculite.
- Collect solid residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- If contamination of drains or waterways occurs, advise emergency services.

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

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling

- **DO NOT** allow clothing wet with material to stay in contact with skin
- 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.
- Avoid smoking, naked lights or ignition sources.
- Avoid contact with incompatible materials.

Safe handling

- 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.
- 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.
- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- **Other information** Store in a cool, dry, well-ventilated area.
- Store away from incompatible materials and foodstuff containers.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storage and handling recommendations contained within this SDS.

Conditions for safe storage, including any incompatibilities

- Metal can or drum
- **Suitable container** Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.
- Avoid reaction with amines, mercaptans, strong acids and oxidising agents
- Avoid cross contamination between the two liquid parts of product (kit).
- **Storage incompatibility** If two part products are mixed or allowed to mix in proportions other than manufacturer's recommendation, polymerisation with gelation and evolution of heat (exotherm) may occur.
- This excess heat may generate toxic vapour

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

INGREDIENT DATA

SourceIngredientMaterial nameTWASTELPeakNotes

Australia Exposure Standardstitanium dioxideTitanium dioxide10 mg/m3Not AvailableNot AvailableNot Available
Australia Exposure StandardsepichlorohydrinEpichlorohydrin2 ppm / 7.6 mg/m3Not AvailableNot AvailableNot Available
Australia Exposure Standardscarbon blackCarbon black3 mg/m3Not AvailableNot AvailableNot Available

EMERGENCY LIMITS

IngredientMaterial nameTEEL-1TEEL-2TEEL-3

titanium dioxideTitanium oxide; (Titanium dioxide)30 mg/m3330 mg/m32,000 mg/m3
glass, oxideFibrous glass; (Fiber glass; Glass frit; Synthetic vitreous fibers)15 mg/m3170 mg/m3990 mg/m3
epichlorohydrinEpichlorohydrinNot AvailableNot AvailableNot Available
carbon blackCarbon black9 mg/m399 mg/m3590 mg/m3

IngredientOriginal IDLHRevised IDLH

phenol/ formaldehyde/ Not AvailableNot Available
epichlorohydrin copolymer
titanium dioxide5000 mg/m3Not Available
glass, oxideNot AvailableNot Available
epichlorohydrin75 ppmNot Available
carbon black1750 mg/m3Not Available
additives, unregulatedNot AvailableNot Available

MATERIAL DATA

Exposure 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.
The basic types of engineering controls are:
Process controls which involve changing the way a job activity or process is done to reduce the risk.

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.
Employers may need to use multiple types of controls to prevent employee overexposure.

Local exhaust ventilation usually required. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection.
Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection.
An approved self contained breathing apparatus (SCBA) may be required in some situations.
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.

Type of Contaminant:Air Speed:
0.25-0.5 m/s (50-100
solvent, vapours, degreasing etc., evaporating from tank (in still air).
f/min.)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating0.5-1 m/s (100-200
acid fumes, pickling (released at low velocity into zone of active generation)f/min.)
Appropriate engineering
controlsdirect spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation1-2.5 m/s (200-500
into zone of rapid air motion)f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high2.5-10 m/s
rapid air motion).(500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the rangeUpper end of the range
1: Room air currents minimal or favourable to capture1: 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 motion4: Small hood-local control only

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.

Personal protection

- Safety glasses with side shields.
- Chemical goggles.
- **Eye and face protection**

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
NOTE:

- 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.

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.
The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and.has to be observed when making a final

choice.
Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried
thoroughly. Application of a non-perfumed moisturiser is recommended.
Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:

- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity

Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).

- When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.
- Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.
- Contaminated gloves should be replaced.

As defined in ASTM F-739-96 in any application, gloves are rated as:

- Excellent when breakthrough time > 480 min
- Good when breakthrough time > 20 min
- Fair when breakthrough time < 20 min
- Poor when glove material degrades

For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.
It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of

Hands/feet protection

the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.
Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers' technical data should always be taken into account to ensure selection of the most appropriate glove for the task.
Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:

- Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.
- Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential

Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.
When handling liquid-grade epoxy resins wear chemically protective gloves , boots and aprons.
The performance, based on breakthrough times ,of:

- Ethyl Vinyl Alcohol (EVAL laminate) is generally excellent
- Butyl Rubber ranges from excellent to good
- Nitrile Butyl Rubber (NBR) from excellent to fair.
- Neoprene from excellent to fair
- Polyvinyl (PVC) from excellent to poor

As defined in ASTM F-739-96

- Excellent breakthrough time > 480 min
- Good breakthrough time > 20 min
- Fair breakthrough time < 20 min
- Poor glove material degradation

Gloves should be tested against each resin system prior to making a selection of the most suitable type. Systems include both the resin and any hardener, individually and collectively)

- **DO NOT** use cotton or leather (which absorb and concentrate the resin), natural rubber (latex), medical or polyethylene gloves (which absorb the resin).
- **DO NOT** use barrier creams containing emulsified fats and oils as these may absorb the resin; silicone-based barrier creams should be reviewed prior to use.

Replacement time should be considered when selecting the most appropriate glove. It may be more effective to select a glove with lower chemical resistance but which is replaced frequently than to select a more resistant glove which is reused many times

Body protection See Other protection below

- Overalls.
- P.V.C. apron.

Other protection Barrier cream.

- Skin cleansing cream.
- Eye wash unit.

Recommended material(s)Respiratory protection

GLOVE SELECTION INDEX Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)
Glove selection is based on a modified presentation of the:
"Forsberg Clothing Performance Index".
Where the concentration of gas/particulates in the breathing zone, approaches or exceeds the "Exposure Standard" (or ES), respiratory protection is required.
The effect(s) of the following substance(s) are taken into account in the ***computer-generated*** selection:
Degree of protection varies with both face-piece and Class of filter; the nature of protection varies with Type of filter.
Metz 4HB-EN Liquid

MaterialCPI	**Required MinimumProtection Factor**	**Half-FaceRespirator**	**Full-FacePowered Air Respirator**	**Respirator**
BUTYLA				

TEFLONAA-PAPR-AUS /
up to 10 x ESA-AUS P2-
Class 1 P2
SARANEX-23B
A-AUS / Class 1
NEOPRENECup to 50 x ES--
P2
PEC
up to 100 x ES-A-2 P2A-PAPR-2 P2 ^
PVAC
^ - Full-face
VITONC
A(All classes) = Organic vapours, B AUS or B1 = Acid gasses, B2 = Acid gas or hydrogen
cyanide(HCN), B3 = Acid gas or hydrogen cyanide(HCN), E = Sulfur dioxide(SO2), G =
VITON/NITRILEC
Agricultural chemicals, K = Ammonia(NH3), Hg = Mercury, NO = Oxides of nitrogen, MB =
* CPI - Chemwatch Performance IndexMethyl bromide, AX = Low boiling point organic compounds(below 65 degC)
A: Best Selection
Cartridge respirators should never be used for emergency ingress or in areas of unknown
B: Satisfactory; may degrade after 4 hours continuous immersion
vapour concentrations or oxygen content. The wearer must be warned to leave the contaminated
C: Poor to Dangerous Choice for other than short term immersion
area immediately on detecting any odours through the respirator. The odour may indicate that
NOTE: As a series of factors will influence the actual performance of the glove, a final
the mask is not functioning properly, that the vapour concentration is too high, or that the mask
selection must be based on detailed observation. -
is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is
* Where the glove is to be used on a short term, casual or infrequent basis, factors such as
considered appropriate.
"feel" or convenience (e.g. disposability), may dictate a choice of gloves which might otherwise
be unsuitable following long-term or frequent use. A qualified practitioner should be consulted.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

AppearanceColoured liquid with a mild odour; does not mixe with water.

Physical state Liquid**Relative density (Water = 1)**1.55
Partition coefficient n-octanol /
OdourNot AvailableNot Available
water
Odour threshold Not Available**Auto-ignition temperature (°C)**>220
pH (as supplied) Not Applicable**Decomposition temperature**Not Available
Melting point / freezing point
Not Available**Viscosity (cSt)**Not Available
(°C)
Initial boiling point and boiling
>200**Molecular weight (g/mol)**Not Applicable
range (°C)
Flash point (°C)~130**Taste**Not Available
Evaporation rate Not Available**Explosive properties**Not Available
FlammabilityNot Applicable**Oxidising properties**Not Available
Surface Tension (dyn/cm or
Upper Explosive Limit (%) Not AvailableNot Available
mN/m)
Lower Explosive Limit (%) Not Available**Volatile Component (%vol)**Not Available
Vapour pressure (kPa) Negligible**Gas group**Not Available
Solubility in water (g/L) Immiscible**pH as a solution (1%)**Not Applicable
Vapour density (Air = 1) Not Available**VOC g/L**Not Available

SECTION 10 STABILITY AND REACTIVITY

ReactivitySee section 7
- Unstable in the presence of incompatible materials.

Chemical stability Product is considered stable.
- Hazardous polymerisation will not occur.

Possibility of hazardous
See section 7
reactions
Conditions to avoid See section 7
Incompatible materials See section 7
Hazardous decomposition
See section 5
products

SECTION 11 TOXICOLOGICAL INFORMATION

Information on toxicological effects

Inhalation of aerosols (mists, fumes), generated by the material during the course of normal handling, may be harmful.
Limited evidence or practical experience suggests that the material may produce irritation of the respiratory system, in a significant 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
Inhaled
repairing the damage. The repair process, which initially evolved to protect mammalian lungs from foreign matter and antigens, may however, produce further lung damage resulting in the impairment of gas exchange, the primary function of the lungs. Respiratory tract irritation often results in an inflammatory response involving the recruitment and activation of many cell types, mainly derived from the vascular system.
Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.
IngestionAt 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)
At sufficiently high doses the material may be nephrotoxic (i.e. poisonous to the kidney).

Skin contact with the material may be harmful; systemic effects may result following absorption.
The material produces moderate skin irritation; evidence exists, or practical experience predicts, that the material either
- produces moderate inflammation of the skin in a substantial number of individuals following direct contact, and/or
- produces significant, but moderate, 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). The dermatitis is
Skin Contact
often characterised by skin redness (erythema) and swelling (oedema) which may progress to blistering (vesiculation), scaling and thickening of the epidermis. At the microscopic level there may be intercellular oedema of the spongy layer of the skin (spongiosis) and intracellular oedema of the epidermis.
Open cuts, abraded or irritated skin should not be exposed to this material
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.
Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals and/or may produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye
Eye
contact may cause inflammation characterised by a temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.
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.
Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals,
Chronic
and/or of producing a positive response in experimental animals.
Limited evidence suggests that repeated or long-term occupational exposure may produce cumulative health effects involving organs or biochemical systems.

TOXICITYIRRITATION
TOXICITYIRRITATION
phenol/ formaldehyde/
[2]
Not Available
dermal (rat) LD50: >400 mg/kg
epichlorohydrin copolymer
[1]
Oral (rat) LD50: >2000 mg/kg

TOXICITYIRRITATION
[1]
Skin (human): 0.3 mg /3D (int)-mild *
Inhalation (rat) LC50: >2.28 mg/l4 h
titanium dioxide
[1]
Oral (rat) LD50: >2000 mg/kg

TOXICITYIRRITATION
glass, oxide
Not AvailableNot Available

TOXICITYIRRITATION
[2]
Eye (rabbit): 23 mg
Dermal (rabbit) LD50: 515 mg/kg
epichlorohydrin
[2]
Eye (rabbit):100 mg/24 hr-moderate
Inhalation (mouse) LC50: 1.5 mg/l/2H
[2]
Skin (rabbit): 10 mg/24 hr (open)
Oral (rat) LD50: 90 mg/kg

TOXICITYIRRITATION

[2]

Not Available

Dermal (rabbit) LD50: >3000 mg/kg

carbon black

[1]

Oral (rat) LD50: >10000 mg/kg

1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified*

Legend:

data extracted from RTECS - Register of Toxic Effect of chemical Substances

The chemical structure of hydroxylated diphenylalkanes or bisphenols consists of two phenolic rings joined together through a bridging carbon. This class of endocrine disruptors that mimic oestrogens is widely used in industry, particularly in plastics

Bisphenol A (BPA) and some related compounds exhibit oestrogenic activity in human breast cancer cell line MCF-7, but there were remarkable differences in activity. Several derivatives of BPA exhibited significant thyroid hormonal activity towards rat pituitary cell line GH3, which releases growth hormone in a thyroid hormone-dependent manner. However, BPA and several other derivatives did not show such activity. Results suggest that the 4-hydroxyl group of the A-phenyl ring and the B-phenyl ring of BPA derivatives are required for these hormonal activities, and substituents at the

PHENOL/ FORMALDEHYDE/

3,5-positions of the phenyl rings and the bridging alkyl moiety markedly influence the activities.

EPICHLOROHYDRIN

Bisphenols promoted cell proliferation and increased the synthesis and secretion of cell type-specific proteins. When ranked by proliferative potency, the

COPOLYMER

longer the alkyl substituent at the bridging carbon, the lower the concentration needed for maximal cell yield; the most active compound contained two propyl

chains at the bridging carbon. Bisphenols with two hydroxyl groups in the para position and an angular configuration are suitable for appropriate hydrogen bonding to the acceptor site of the oestrogen receptor.

The material may cause skin irritation after prolonged or repeated exposure and may produce a contact dermatitis (nonallergic). This form of dermatitis is often characterised by skin redness (erythema) and swelling the epidermis. Histologically there may be intercellular oedema of the spongy layer (spongiosis) and intracellular oedema of the epidermis.

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For titanium dioxide:

Humans can be exposed to titanium dioxide via inhalation, ingestion or dermal contact. In human lungs, the clearance kinetics of titanium dioxide is poorly human volunteers revealed that titanium dioxide particles only penetrate into the outermost layers of the stratum corneum, suggesting that healthy skin is an

effective barrier to titanium dioxide. There are no studies on penetration of titanium dioxide in compromised skin.

Respiratory effects that have been observed among groups of titanium dioxide-exposed workers include decline in lung function, pleural disease with plaques and pleural thickening, and mild fibrotic changes. However, the workers in these studies were also exposed to asbestos and/or silica.

No data were available on genotoxic effects in titanium dioxide-exposed humans.

Many data on deposition, retention and clearance of titanium dioxide in experimental animals are available for the inhalation route. Titanium dioxide inhalation studies showed differences — both for normalized pulmonary burden (deposited mass per dry lung, mass per body weight) and clearance kinetics — among rodent species including rats of different size, age and strain. Clearance of titanium dioxide is also affected by pre-exposure to gaseous pollutants or co-exposure to cytotoxic aerosols. Differences in dose rate or clearance kinetics and the appearance of focal areas of high particle burden have been implicated in the higher toxic and inflammatory lung responses to intratracheally instilled vs inhaled titanium dioxide particles. Experimental studies with titanium dioxide have demonstrated that rodents experience dose-dependent impairment of alveolar macrophage-mediated clearance. Hamsters

have the most efficient clearance of inhaled titanium dioxide. Ultrafine primary particles of titanium dioxide are more slowly cleared than their fine counterparts.

Titanium dioxide causes varying degrees of inflammation and associated pulmonary effects including lung epithelial cell injury, cholesterol granulomas and fibrosis. Rodents experience stronger pulmonary effects after exposure to ultrafine titanium dioxide particles compared with fine particles on a mass basis. These differences are related to lung burden in terms of particle surface area, and are considered to result from impaired phagocytosis and sequestration of ultrafine particles into the interstitium.

Fine titanium dioxide particles show minimal cytotoxicity to and inflammatory/pro-fibrotic mediator release from primary human alveolar macrophages in vitro

compared with other particles. Ultrafine titanium dioxide particles inhibit phagocytosis of alveolar macrophages in vitro at mass dose concentrations at which this effect does not occur with fine titanium dioxide. In-vitro studies with fine and ultrafine titanium dioxide and purified DNA show induction of DNA damage that is suggestive of the generation of reactive oxygen species by both particle types. This effect is stronger for ultrafine than for fine titanium oxide,

and is markedly enhanced by exposure to simulated sunlight/ultraviolet light.

Animal carcinogenicity data

Pigmentary and ultrafine titanium dioxide were tested for carcinogenicity by oral administration in mice and rats, by inhalation in rats and female mice, by intratracheal administration in hamsters and female rats and mice, by subcutaneous injection in rats and by intraperitoneal administration in male mice and

female rats.

In one inhalation study, the incidence of benign and malignant lung tumours was increased in female rats. In another inhalation study, the incidences of lung

adenomas were increased in the high-dose groups of male and female rats. Cystic keratinizing lesions that were diagnosed as squamous-cell carcinomas but re-evaluated as non-neoplastic pulmonary keratinizing cysts were also observed in the high-dose groups of female rats. Two inhalation studies in rats and one in female mice were negative.

Intratracheally instilled female rats showed an increased incidence of both benign and malignant lung tumours following treatment with two types of titanium

dioxide. Tumour incidence was not increased in intratracheally instilled hamsters and female mice.

In-vivo studies have shown enhanced micronucleus formation in bone marrow and peripheral blood lymphocytes of intraperitoneally instilled mice. Increased

Hprt mutations were seen in lung epithelial cells isolated from titanium dioxide-instilled rats. In another study, no enhanced oxidative DNA damage was observed in lung tissues of rats that were intratracheally instilled with titanium dioxide. The results of most in-vitro genotoxicity studies with titanium dioxide

were negative.

* IUCLID

A similar spherical glass powder was nontoxic to rats at 5,000 mg/kg. All animals survived, gained weight and appeared active and healthy. There were no

signs of gross toxicity, adverse pharmacologic effects or abnormal behavior. There are no known reports of subchronic toxicity of nonfibrous glass. There
GLASS, OXIDE
are no known reports of carcinogenicity of nonfibrous glass When tested for primary irritation potential, a similar material caused minimal irritation to eyes and was non-irritating to skin. Dust in excess of recommended exposure limits may result in irritation to the respiratory tract

The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

Asthma-like symptoms may continue for months or even years after exposure to the material ceases. This may be due to a non-allergenic condition known as
reactive airways dysfunction syndrome (RADS) which can occur following exposure to high levels of highly irritating compound. Key criteria for the diagnosis of RADS include the absence of preceding respiratory disease, in a non-atopic individual, with abrupt onset of persistent asthma-like symptoms within minutes to hours of a documented exposure to the irritant. A reversible airflow pattern, on spirometry, with the presence of moderate to severe bronchial hyperreactivity on methacholine challenge testing and the lack of minimal lymphocytic inflammation, without eosinophilia, have also been included
in the criteria for diagnosis of RADS. 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. Industrial bronchitis, on the other hand, is a disorder that occurs as result of exposure due to high concentrations of irritating substance (often particulate in nature) and is completely reversible after exposure ceases. The disorder is characterised by dyspnea, cough and mucus production.
Oxiranes (including glycidyl ethers and alkyl oxides, and epoxides) exhibit many common characteristics with respect to animal toxicology. One such oxirane
is ethyloxirane; data presented here may be taken as representative.
for 1,2-butylene oxide (ethyloxirane):
EPICHLOROHYDRIN
Ethyloxirane increased the incidence of tumours of the respiratory system in male and female rats exposed via inhalation. Significant increases in nasal papillary adenomas and combined alveolar/bronchiolar adenomas and carcinomas were observed in male rats exposed to 1200 mg/m3 ethyloxirane via inhalation for 103 weeks. There was also a significant positive trend in the incidence of combined alveolar/bronchiolar adenomas and carcinomas. Nasal papillary adenomas were also observed in 2/50 high-dose female rats with none occurring in control or low-dose animals. In mice exposed chronically via inhalation, one male mouse developed a squamous cell papilloma in the nasal cavity (300 mg/m3) but other tumours were not observed. Tumours were not
observed in mice exposed chronically via dermal exposure. When trichloroethylene containing 0.8% ethyloxirane was administered orally to mice for up to

weeks, followed by 0.4% from weeks 40 to 69, squamous-cell carcinomas of the forestomach occurred in 3/49 males (p=0.029, age-adjusted) and 1/48 females at week 106. Trichloroethylene administered alone did not induce these tumours and they were not observed in control animals . Two structurally related substances, oxirane (ethylene oxide) and methyloxirane (propylene oxide), which are also direct-acting alkylating agents, have been classified as carcinogenic

WARNING: This substance has been classified by the IARC as Group 2A: Probably Carcinogenic to Humans.
Tenth Annual Report on Carcinogens: Substance anticipated to be Carcinogen
[*National Toxicology Program: U.S. Dep. of Health & Human Services 2002*]
Intraperitoneal (Guinea pig) LD50: 118 mg/kg
CARBON BLACK Inhalation (rat) TCLo: 50 mg/m3/6h/90D-I Nil reported
The following information refers to contact allergens as a group and may not be specific to this product.
Contact allergies quickly manifest themselves as contact eczema, more rarely as urticaria or Quincke's oedema. The pathogenesis of contact eczema
PHENOL/ FORMALDEHYDE/
involves a cell-mediated (T lymphocytes) immune reaction of the delayed type. Other allergic skin reactions, e.g. contact urticaria, involve antibody-mediated
EPICHLOROHYDRIN
immune reactions. The significance of the contact allergen is not simply determined by its sensitisation potential: the distribution of the substance and the
COPOLYMER &
opportunities for contact with it are equally important. A weakly sensitising substance which is widely distributed can be a more important allergen than one
EPICHLOROHYDRIN
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.
PHENOL/ FORMALDEHYDE/
EPICHLOROHYDRIN
The material may produce moderate eye irritation leading to inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.
COPOLYMER & TITANIUM
DIOXIDE

TITANIUM DIOXIDE & CARBON
BLACKWARNING: This substance has been classified by the IARC as Group 2B: Possibly Carcinogenic to Humans.
GLASS, OXIDE & CARBON
No significant acute toxicological data identified in literature search.
BLACK

Acute ToxicityCarcinogenicity
✔✔**Skin Irritation/CorrosionReproductivity**
✔⊘**Serious Eye Damage/IrritationSTOT - Single Exposure**
✔⊘**Respiratory or Skin**
STOT - Repeated Exposure
✔⊘ **sensitisation**
MutagenicityAspiration Hazard

– Data available but does not fill the criteria for classification

Legend:

– Data available to make classification

– Data Not Available to make classification

SECTION 12 ECOLOGICAL INFORMATION

Toxicity

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
Metz 4HB-EN Liquid	Not	Not	Not Available	Not Available	Not Available

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	0.55mg/L	2
phenol/ formaldehyde/ epichlorohydrin copolymer	EC50	48	Crustacea	1.6mg/L	2
	EC50	72	Algae or other aquatic plants	>1.8mg/L	2

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	155mg/L	2
	EC50	48	Crustacea	>10mg/L	2
titanium dioxide	EC50	72	Algae or other aquatic plants	5.83mg/L	4
	EC20	72	Algae or other aquatic plants	1.81mg/L	4
	NOEC	336	Fish	0.089mg/L	4

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	EC50	48	Crustacea	0.476mg/L	2
glass, oxide	NOEC	48	Crustacea	0.0032mg/L	2

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	<10mg/L	1
	EC50	48	Crustacea	=24mg/L	1
epichlorohydrin	EC50	72	Algae or other aquatic plants	7.1mg/L	2
	NOEC	72	Algae or other aquatic plants	1.7mg/L	2

	ENDPOINT	TEST DURATION (HR)	SPECIES	VALUE	SOURCE
	LC50	96	Fish	=1000mg/L	1
carbon black	NOEC	96	Fish	=1000mg/L	1

Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 3. EPIWIN Suite V3.12 (QSAR) - Aquatic Toxicity Data (Estimated) 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

Legend:

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
DO NOT discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
titanium dioxide	HIGH	HIGH
epichlorohydrin	LOW (Half-life = 56 days)	MEDIUM (Half-life = 60.75 days)

Bioaccumulative potential

Ingredient	Bioaccumulation
titanium dioxide	LOW (BCF = 10)
epichlorohydrin	LOW (BCF = 1.02)

titanium dioxide LOW (KOC = 23.74)
epichlorohydrin LOW (KOC = 4.491)

SECTION 13 DISPOSAL CONSIDERATIONS

Waste treatment methods

- Containers may still present a chemical hazard/ danger when empty.
- Return to supplier for reuse/ recycling if possible.

Otherwise:

- If container can not be cleaned sufficiently well to ensure that residuals do not remain or if the container cannot be used to store the same product, then puncture containers, to prevent re-use, and bury at an authorised landfill.
- Where possible retain label warnings and SDS and observe all notices pertaining to the product.
- **DO NOT** allow wash water from cleaning or process equipment to enter drains.

Product / Packaging disposal

- 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.

SECTION 14 TRANSPORT INFORMATION

Labels Required

Marine Pollutant

HAZCHEM•3Z

Land transport (ADG)

UN number3082

UN proper shipping nameENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains phenol/ formaldehyde/ epichlorohydrin copolymer)

Class9

Transport hazard class(es)

SubriskNot Applicable

Packing groupIII

Environmental hazard Environmentally hazardous

Special provisions274 331 335 375 AU01

Special precautions for user

Limited quantity5 L

Environmentally Hazardous Substances meeting the descriptions of UN 3077 or UN 3082
are not subject to this Code when transported by road or rail in;
(a) packagings;
(b) IBCs; or
(c) any other receptacle not exceeding 500 kg(L).
- Australian Special Provisions (SP AU01) - ADG Code 7th Ed.

Air transport (ICAO-IATA / DGR)

UN number3082

UN proper shipping name Environmentally hazardous substance, liquid, n.o.s. * (contains phenol/ formaldehyde/ epichlorohydrin copolymer)

ICAO/IATA Class9
Transport hazard class(es)ICAO / IATA SubriskNot Applicable
ERG Code9L

Cargo Only Maximum Qty / Pack450 L
Passenger and Cargo Packing Instructions964
Passenger and Cargo Maximum Qty / Pack450 L
Passenger and Cargo Limited Quantity Packing InstructionsY964
Passenger and Cargo Limited Maximum Qty / Pack30 kg G

Sea transport (IMDG-Code / GGVSee)
UN number3082
UN proper shipping nameENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains phenol/ formaldehyde/ epichlorohydrin copolymer)

IMDG Class9
Transport hazard class(es)
IMDG SubriskNot Applicable

Packing groupIII
Environmental hazard Marine Pollutant

EMS NumberF-A , S-F
Special precautions for user Special provisions274 335 969
Limited Quantities5 L

Transport in bulk according to Annex II of MARPOL and the IBC code
Not Applicable

SECTION 15 REGULATORY INFORMATION

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

PHENOL/ FORMALDEHYDE/ EPICHLOROHYDRIN COPOLYMER(9003-36-5) IS FOUND ON THE FOLLOWING REGULATORY LISTS
Australia Inventory of Chemical Substances (AICS)

TITANIUM DIOXIDE(13463-67-7) IS FOUND ON THE FOLLOWING REGULATORY LISTS
Australia Exposure StandardsInternational Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
Australia Inventory of Chemical Substances (AICS)

GLASS, OXIDE(65997-17-3) IS FOUND ON THE FOLLOWING REGULATORY LISTS
Australia Inventory of Chemical Substances (AICS)Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix A

EPICHLOROHYDRIN(106-89-8) IS FOUND ON THE FOLLOWING REGULATORY LISTS
Australia Exposure StandardsAustralia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix J (Part 2)
Australia Hazardous Chemical Information System (HCIS) - Hazardous Chemicals
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Schedule 7
Australia Inventory of Chemical Substances (AICS)
Australia Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP) - Appendix F (Part 3)
International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs

CARBON BLACK(1333-86-4) IS FOUND ON THE FOLLOWING REGULATORY LISTS
Australia Exposure StandardsInternational Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
Australia Inventory of Chemical Substances (AICS)

National Inventory Status
National InventoryStatus
Australia - AICSY
Canada - DSLY

Canada - NDSLN (carbon black; phenol/ formaldehyde/ epichlorohydrin copolymer; epichlorohydrin; glass, oxide)
China - IECSCY
Europe - EINEC / ELINCS / NLPY
Japan - ENCSN (phenol/ formaldehyde/ epichlorohydrin copolymer; glass, oxide)

Korea - KECIY
New Zealand - NZIoCY
Philippines - PICCSY
USA - TSCAY

Y = All ingredients are on the inventory

Legend:

N = Not determined or one or more ingredients are not on the inventory and are not exempt from listing(see specific ingredients in brackets)

SECTION 16 OTHER INFORMATION

Ingredients with multiple cas numbers

NameCAS No

phenol/ formaldehyde/
9003-36-5, 39342-30-8, 86159-38-8
epichlorohydrin copolymer
13463-67-7, 1317-70-0, 1317-80-2, 12188-41-9, 1309-63-3, 100292-32-8, 101239-53-6, 116788-85-3, 12000-59-8, 12701-76-7, 12767-65-6, 12789-63-8, 1344-29-2, 185323-71-1, 185828-91-5, 188357-76-8, 188357-79-1, 195740-11-5, 221548-98-7, 224963-00-2, 246178-32-5, 252962-41-7, 37230-92-5,
titanium dioxide
37230-94-7, 37230-95-8, 37230-96-9, 39320-58-6, 39360-64-0, 39379-02-7, 416845-43-7, 494848-07-6, 494848-23-6, 494851-77-3, 494851-98-8, 55068-84-3, 55068-85-4, 552316-51-5, 62338-64-1, 767341-00-4, 97929-50-5, 98084-96-9
epichlorohydrin106-89-8, 51594-55-9, 67843-74-7

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.

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
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