

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 1 of 19

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

AC100E PART B

SYNONYMS

PROPER SHIPPING NAME

ORGANIC PEROXIDE TYPE E, SOLID

PRODUCT USE

Adhesive system applied by a cartridge.

SUPPLIER

Company: Powers Fasteners Australasia Pty Ltd

Address:

Factory 3, 205 Abbots Road

Dandenong South

VIC 3175

AUSTRALIA

Telephone: +61 3 8787 5888

Telephone: 1800 677 872 (freecall)

Fax: +61 3 8787 5899

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. DANGEROUS GOODS.

According to the Criteria of NOHSC, and the ADG Code.

POISONS SCHEDULE

None

RISK

Risk of explosion by shock, friction, fire or other sources of ignition.

Contact with combustible material may cause fire.

Irritating to eyes.

May cause SENSITISATION by skin contact.

SAFETY

Keep away from combustible material.

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 2 of 19

Section 2 - HAZARDS IDENTIFICATION ...

Keep container in a well ventilated place.
Avoid exposure - obtain special instructions before use.
Keep in a cool place.
To clean the floor and all objects contaminated by this material, use water and detergent.
Keep container tightly closed.
Take off immediately all contaminated clothing.
In case of contact with eyes, rinse with plenty of water and contact Doctor or Poisons Information Centre.
If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).
If you feel unwell contact Doctor or Poisons Information Centre. (Show the label if possible).

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
dibenzoyl peroxide	94-36-0	20-40
butyl benzyl phthalate	85-68-7	5-40
dicyclohexyl phthalate	84-61-7	5-40
silica, dimethylsiloxane treated	67762-90-7	1-10
bisphenol A/ epichlorohydrin resin	25068-38-6	0.1-0.9
phenol/ formaldehyde/ epichlorohydrin copolymer	9003-36-5	0.1-0.9

Section 4 - FIRST AID MEASURES

SWALLOWED

- IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY.
 - For advice, contact a Poisons Information Centre or a doctor.
 - Where Medical attention is not immediately available or where the patient is more than 15 minutes from a hospital or unless instructed otherwise:
 - For advice, contact a Poisons Information Centre or a doctor.
 - Urgent hospital treatment is likely to be needed.
 - If conscious, give water to drink.
 - 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.
- 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 MSDS 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 MSDS.

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 3 of 19

Section 4 - FIRST AID MEASURES ...

EYE

If this product comes in contact with the eyes:

- Immediately hold the eyelids apart and flush the eye with 2% sodium carbonate solution or 5% sodium ascorbate solution then wash continuously for at least 15 minutes with fresh 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.
- Transport to hospital (or doctor) without further delay.
- Removal of contact lenses should only be undertaken by trained personnel.

SKIN

If skin or hair contact occurs:

- 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.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

NOTES TO PHYSICIAN

Treat symptomatically.

Toxic myocarditis may follow ingestion of oxidizing agents such as peroxides.

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.
- DO NOT attempt neutralisation as exothermic reaction may occur.
- Skin burns should be covered with dry, sterile bandages, following decontamination.

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.

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 4 of 19

Section 4 - FIRST AID MEASURES ...

- 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
-

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

FOR SMALL FIRE:

- Water spray, foam, CO₂ or dry chemical.
- DO NOT use water jets.

FOR LARGE FIRE:

Flood fire area with water from a distance.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
 - May be violently or explosively reactive.
 - Wear full body protective clothing with breathing apparatus.
 - Prevent, by any means available, spillage from entering drains or water courses.
 - Consider evacuation (or protect in place).
 - Fight fire from a safe distance, with adequate cover.
 - Extinguishers should be used only by trained personnel.
 - Use water delivered as a fine spray to control fire and cool adjacent area.
 - 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.
 - If fire gets out of control withdraw personnel and warn against entry.
 - Equipment should be thoroughly decontaminated after use.
 - Use water delivered as a fine spray to control fire and cool adjacent area.
 - Do not approach containers suspected to be hot.
 - Cool fire exposed containers with water spray from a protected location.
 - If safe to do so, remove containers from path of fire.
 - Equipment should be thoroughly decontaminated after use.
- When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 1000 metres in all directions.

FIRE/EXPLOSION HAZARD

- Will not burn but increases intensity of fire.
- May explode from friction, shock, heat or containment.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- Heat affected containers remain hazardous.

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet

Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88

CD 2004/4 Page 5 of 19

Section 5 - FIRE FIGHTING MEASURES ...

- Contact with combustibles such as wood, paper, oil or finely divided metal may produce spontaneous combustion or violent decomposition.
- May emit irritating, poisonous or corrosive fumes.
- Combustion/decomposition may produce acrid/toxic fumes of carbon monoxide (CO).

Organic peroxides provide internal oxygen for combustion, so burn intensely - simple smothering actions are not effective against established fires.

Decomposition may produce toxic fumes of carbon dioxide (CO₂), nitrogen oxides (NO_x).

other pyrolysis products typical of burning organic material

Avoid reaction with acids, alkalis, oxidising and reducing agents,

metals and metal oxides, and combustible materials.

Alkalis cause rapid decomposition of benzoyl peroxide with generation of large volumes of carbon dioxide gas (CO₂) and may pressurise containers.

Avoid contact with copper, brass, lead and zinc.

FIRE INCOMPATIBILITY

Avoid storage with reducing agents.

Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous

Avoid reaction with acids, alkalis, oxidising and reducing agents,

metals and metal oxides, and combustible materials.

Alkalis cause rapid decomposition of benzoyl peroxide with generation of large volumes of carbon dioxide gas (CO₂) and may pressurise containers.

Avoid contact with copper, brass, lead and zinc.

HAZCHEM

2W

Personal Protective Equipment

PERSONAL PROTECTION EQUIPMENT

Breathing apparatus.

Gas tight chemical resistant suit.

Limit exposure duration to 1 BA set - 30 mins.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- Clean up all spills immediately.
- No smoking, naked lights, ignition sources.
- Avoid all contact with any organic matter including fuel, solvents, sawdust, paper or cloth and other incompatible materials, as ignition may result.
- Avoid breathing dust or vapours and all contact with skin and eyes.
- Control personal contact by using protective equipment.
- Contain and absorb spill with dry sand, earth, inert material or vermiculite.

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 6 of 19

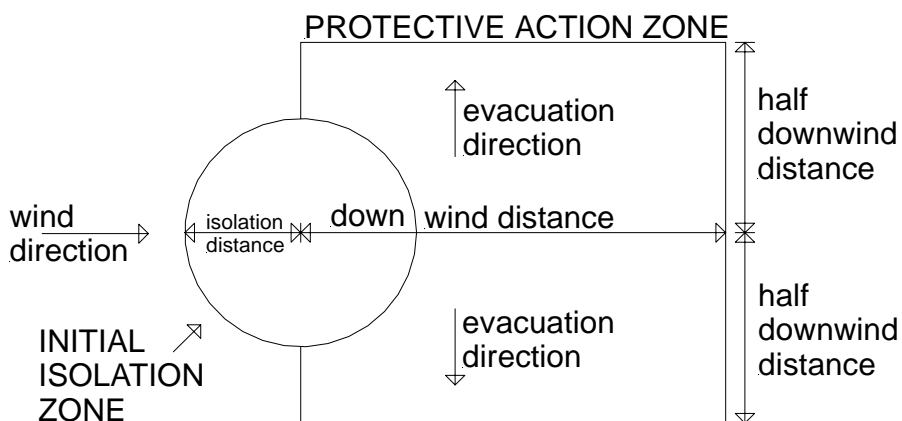
Section 6 - ACCIDENTAL RELEASE MEASURES ...

- DO NOT use sawdust as fire may result.
- Scoop up solid residues and seal in labelled drums for disposal.
- Neutralise/decontaminate area.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water courses.
- No smoking, flames or ignition sources.
- Increase ventilation.
- Contain spill with sand, earth or other clean, inert materials.
- NEVER USE organic absorbents such as sawdust, paper or cloth.
- Use spark-free and explosion-proof equipment.
- Collect any recoverable product into labelled containers for possible recycling.
- Avoid contamination with organic matter to prevent subsequent fire and explosion.
- DO NOT mix fresh with recovered material.
- Collect residues and seal in labelled drums for disposal.
- Wash area and prevent runoff into drains.
- Decontaminate equipment and launder all protective clothing before storage and re-use.
- If contamination of drains or waterways occurs advise emergency services.

PROTECTIVE ACTIONS FOR SPILL



From IERG (Canada/Australia)

Isolation Distance	25 metres
Downwind Protection Distance	250 metres
IERG Number	32

FOOTNOTES

1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This zone assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees on either side of the predominant wind direction, resulting in a crosswind protective action distance equal to the downwind protective action distance.

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 7 of 19

Section 6 - ACCIDENTAL RELEASE MEASURES ...

- 2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the spill and working away from the site in the downwind direction. Within the protective action zone a level of vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated and unable to take protective action and/or incurring serious or irreversible health effects.
- 3 INITIAL ISOLATION ZONE is determined as an area, including upwind of the incident, within which a high probability of localised wind reversal may expose nearly all persons without appropriate protection to life-threatening concentrations of the material.
- 4 SMALL SPILLS involve a leaking package of 200 litres (55 US gallons) or less, such as a drum (jerrican or box with inner containers). Larger packages leaking less than 200 litres and compressed gas leaking from a small cylinder are also considered "small spills".
LARGE SPILLS involve many small leaking packages or a leaking package of greater than 200 litres, such as a cargo tank, portable tank or a "one-tonne" compressed gas cylinder.
- 5 Guide 145 is taken from the US DOT emergency response guide book.
- 6 IERG information is derived from CANUTEC - Transport Canada.

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid personal contact and inhalation of dust, mist or vapours.
 - Provide adequate ventilation.
 - Always wear protective equipment and wash off any spillage from clothing.
 - Keep material away from light, heat, flammables or combustibles.
 - Keep cool, dry and away from incompatible materials.
 - Avoid physical damage to containers.
 - DO NOT repack or return unused portions to original containers. Withdraw only sufficient amounts for immediate use.
 - Contamination can lead to decomposition leading to possible intense heat and fire.
 - When handling NEVER smoke, eat or drink.
 - Always wash hands with soap and water after handling.
 - Use only good occupational work practice.
 - Observe manufacturer's storing and handling directions.
- Mix only as much as is required.
DO NOT return the mixed material to original containers.
Avoid cross contamination between the two liquid parts of product (kit). 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

SUITABLE CONTAINER

- DO NOT repack. Use containers supplied by manufacturer only.
- Metal packagings meeting the test criteria of Packing Group I, must NOT be used; this avoids unnecessary confinement.

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet

Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88

CD 2004/4 Page 8 of 19

Section 7 - HANDLING AND STORAGE ...

- Packagings for organic peroxides must be constructed so that none of the materials, which are in contact with the contents, will catalyse or otherwise dangerously affect the properties of their contents.
- For combination packages, cushioning materials must not be readily combustible and must NOT cause decomposition of the organic peroxide if leakage occurs. Some plastics may be incompatible with this material, check with manufacturer for storage suitability.
- Check that containers are clearly labelled.
Type E and F Solid Organic Peroxides, UN 3108, and UN 3110, UN 3118 and UN 3120 are to be packed to the requirements of Packing method OP8B of the UN Dangerous Goods Code, with maximum mass of 200 kg. in a steel, aluminium, plastic drum/ container or plastic inner receptacle in fibreboard or metal outer drum.
Plastic cartridge.

STORAGE INCOMPATIBILITY

Avoid any contamination of this material as it is very reactive and any contamination is potentially hazardous.

Avoid storage with reducing agents.

- Organic peroxides as a class are highly reactive.
- They are thermally unstable and prone to undergoing exothermic self-accelerating decomposition.
- Organic peroxides may decompose explosively, burn rapidly, be impact and/or friction sensitive and react dangerously with many other substances.
- Amines and polyester accelerators (cobalt salts, for example) if mixed with organic peroxides / organic peroxide mixtures will cause rapid / spontaneous decomposition with fire / explosion hazard.
- Avoid any contamination.
- Avoid finely divided combustible materials
- Avoid all external heat.
- Avoid mixing or reaction with acids, alkalies, reducing agents, metal powders, metal oxides, transition metals and their compounds.
- Alkalies decompose peroxides / peroxide mixtures and may generate large volumes of carbon dioxide and pressurize containers.
- Avoid contact with copper, brass and zinc (containers or stirrers, for example)

STORAGE REQUIREMENTS

FOR MINOR QUANTITIES:

Ensure that:

- packages are not opened in storage area,
- the goods are kept at least 3 metres from sources of heat as well as all other dangerous goods and all other materials which might react with this material might react to cause a fire, a chemical reaction or explosion,
- materials for absorbing and neutralising spills are kept near the storage;
- procedures are displayed at the storage describing actions to be taken in the event of a spill or fire.
- adequate numbers and types of portable fire extinguisher are provided in or near the storage area.

FOR PACKAGE STORAGE:

- If the material is stored in an indoor fireproof cabinet, the cabinet must be vented to outside the building containing the cabinet.
- Packages must be protected from exposure to weather unless the packages are:

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 9 of 19

Section 7 - HANDLING AND STORAGE ...

(i) sole packages of more than 20 l capacity (ii) of metallic or plastic construction (iii) securely closed and are not to be opened in the storage area (iv) stored in such a manner that rain water, contaminated with the material, is collected and disposed of safely.

- Packages must NOT be located in a basement or other place below ground level.
- The store has a smooth non-combustible floor or a floor coated to prevent impregnation by the material.
- There are no open drains, traps, tunnels or pits under the floor where molten material might collect or be confined.
- Drainage must be provided so that in the event of fire, molten material may be collected and confined.
- Drainage and kerbing must be provided so that in the event of fire, molten material will flow clear of buildings and other storage areas.
- Pallets and dunnage used to store the material must be coated to prevent impregnation
- Materials for absorbing and neutralising spills must be kept near the storage.
- Adequate portable fire extinguishers are provided.
- Ensure proper stock-control measures are maintained to prevent prolonged storage of dangerous goods.
- Store in original containers in an isolated approved flammable materials storage area.
- Keep containers securely sealed as supplied.
- WARNING: Gradual decomposition during storage in sealed containers may lead to a large pressure build-up and subsequent explosion.
- No smoking, naked lights, heat or ignition sources.
- Store in a cool, dry, well ventilated area.
- Store under cover and away from sunlight.
- Store below safe storage (control) temperature. Always store below 35 deg.C.
- Store away from flammable or combustible materials, debris and waste. Contact may cause fire or violent reaction.
- Store away from incompatible materials.
- Store away from foodstuff containers
- DO NOT stack on wooden floors or wooden pallets.
- Protect containers against physical damage.
- Check regularly for spills and leaks.
- Observe manufacturer's storage and handling recommendations.
- Keep locked up.
- Restrictions may apply on quantities and to other materials permitted in the same location.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³
Australian Exposure Standards	Benzoyl peroxide		5				

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 10 of 19

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

No data available for butyl benzyl phthalate as (CAS: 85-68-7) / (CAS: 84-61-7) / (CAS: 67762-90-7) / (CAS: 25068-38-6) / (CAS: 9003-36-5)

Not available. Refer to individual constituents.

EXPOSURE STANDARDS FOR MIXTURE

"Worst Case" computer-aided prediction of spray/ mist or fume/ dust components and concentration:

Composite Exposure Standard for Mixture (TWA) :3.9646 mg/m³.

Operations which produce a spray/mist or fume/dust, introduce particulates to the breathing zone.

If the breathing zone concentration of ANY of the components listed below is exceeded, "Worst Case" considerations deem the individual to be overexposed.

Component Breathing Zone ppm Breathing Zone mg/m³ Mixture Conc (%)

Component	Breathing Zone (mg/m ³)	Mixture Conc (%)
butyl benzyl phthalate	1.5858	40.0
dibenzoyl peroxide	1.5858	40.0
dicyclohexyl phthalate	0.7493	18.9
silica, dimethylsiloxane treated	0.0396	1.0
bisphenol A/ epichlorohydrin resin	0.0040	0.1

INGREDIENT DATA

DIBENZOYL PEROXIDE:

TLV TWA: 5 mg/m³ A4 [ACGIH]

PEL TWA: 5 mg/m³ [OSHA Z1]

TLV TWA: 5 mg/m³ A4

NOTE: This substance has been classified by the ACGIH as A4 NOT classifiable as causing Cancer in humans

ES TWA: 5 mg/m³

OES TWA: 5 mg/m³

MAK value: 5 mg/m³

- measured as the inhalable fraction of the aerosol.

MAK Category I Peak Limitation: For local irritants Allows excursions of twice the MAK value for 5 minutes at a time, 8 times per shift.

MAK values, and categories and groups are those recommended within the Federal Republic of Germany

IDLH Level: 1500 mg/m³

The recommendation for the TLV-TWA is based on the absence of subjective symptoms of irritation of the nose and throat in humans exposed to 5.25 mg/m³. Whether this is sufficiently low to prevent cumulative effects in man is not known.

BUTYL BENZYL PHTHALATE:

No exposure limits set by NOHSC or ACGIH

OES TWA: 5 mg/m³

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 11 of 19

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

CEL TWA: 3 mg/m³; STEL: 5 mg/m³
[compare OEL TWA (Sweden): 3 mg/m³; STEL: 5 mg/m³]

DICYCLOHEXYL PHTHALATE:

TLV TWA: 10 mg/m³ (Value for particulate matter containing no asbestos and <1% crystalline silica, Inhalable fraction) [ACGIH]

TLV TWA: 3 mg/m³ (Value for particulate matter containing no asbestos and <1% crystalline silica, Respirable fraction) [ACGIH]

Dusts not otherwise classified, as inspirable dust;

ES TWA: 10 mg/m³

OES TWA: 5 mg/m³

SILICA, DIMETHYLSILOXANE TREATED:

TLV TWA: 10 mg/m³ (Value for particulate matter containing no asbestos and <1% crystalline silica, Inhalable fraction) [ACGIH]

TLV TWA: 3 mg/m³ (Value for particulate matter containing no asbestos and <1% crystalline silica, Respirable fraction) [ACGIH]

Dusts not otherwise classified, as inspirable dust;

ES TWA: 10 mg/m³

BISPHENOL A/ EPICHLOROHYDRIN RESIN:

TLV TWA: 10 mg/m³ (Value for particulate matter containing no asbestos and <1% crystalline silica, Inhalable fraction) [ACGIH]

TLV TWA: 3 mg/m³ (Value for particulate matter containing no asbestos and <1% crystalline silica, Respirable fraction) [ACGIH]

Dusts not otherwise classified, as inspirable dust;

ES TWA: 10 mg/m³

PHENOL/ FORMALDEHYDE/ EPICHLOROHYDRIN COPOLYMER:

No exposure limits set by NOHSC or ACGIH

PERSONAL PROTECTION

EYE

- Chemical goggles.
- Full face shield.
- Contact lenses pose a special hazard; soft lenses may absorb irritants and all lenses concentrate them.

HANDS/FEET

Wear chemical protective gloves, eg. PVC.

Wear safety footwear or safety gumboots, eg. Rubber.

DO NOT wear cotton or cotton-backed gloves.

DO NOT wear leather gloves.

Promptly hose all spills off leather shoes or boots or ensure that such footwear is protected with PVC over-shoes.

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.

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 12 of 19

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

OTHER

- Overalls.
- PVC Apron.
- PVC protective suit may be required if exposure severe.
- Eyewash unit.
- Ensure there is ready access to a safety shower.

GLOVE SELECTION INDEX

Glove selection is based on a modified presentation of the:

"Forsberg Clothing Performance Index".

The effect(s) of the following substance(s) are taken into account in the computer-generated selection:

Substance

butyl benzyl phthalate

NITRILE A

* CPI - Chemwatch Performance Index

A: Best Selection

B: Satisfactory; may degrade after 4 hours continuous immersion

C: Poor to Dangerous Choice for other than short term immersion

NOTE: As a series of factors will influence the actual performance of the glove, a final selection must be based on detailed observation. -

* Where the glove is to be used on a short term, casual or infrequent basis, factors such as "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.

RESPIRATOR

Selection of the Class and Type of respirator will depend upon the level of breathing zone contaminant and the chemical nature of the contaminant.

Protection Factors (defined as the ratio of contaminant outside and inside the mask) may also be important.

Breathing Zone Level ppm (volume)	Maximum Protection Factor	Half-face Respirator	Full-Face Respirator
1000	10	A-AUS P	-
1000	50	-	A-AUS P
5000	50	Airline *	-
5000	100	-	A-2 P
10000	100	-	A-3 P
	100+		Airline**

* - Continuous Flow ** - Continuous-flow or positive pressure demand

The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required. For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 13 of 19

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION ...

ENGINEERING CONTROLS

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances. If risk of overexposure exists, wear approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Black paste with a characteristic odour; does not mix with water.

PHYSICAL PROPERTIES

Liquid.
Does not mix with water.
Sinks in water.

Molecular Weight: Not applicable
Melting Range (°C): Not available
Solubility in water (g/L): Immiscible
pH (1% solution): Not applicable
Volatile Component (%vol): Not available
Relative Vapour Density (air=1): Not available
Lower Explosive Limit (%): Not applicable
Autoignition Temp (°C): Not applicable
State: Non slump paste

Boiling Range (°C): Not available
Specific Gravity (water=1): 1.12
pH (as supplied): Not applicable
Vapour Pressure (kPa): Not available
Evaporation Rate: Not available
Flash Point (°C): Not applicable
Upper Explosive Limit (%): Not applicable
Decomposition Temp (°C):

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
 - Product is considered stable under normal handling conditions.
 - Prolonged exposure to heat.
 - Hazardous polymerisation will not occur.
- BREThERICK: Handbook of Reactive Chemical Hazards, 4th Edition.
Avoid strong acids, oxidisers, reducing agents, metals, metal oxides, transition metals and their compounds, amines and combustibles, especially those which are finely divided
DO NOT use brass or copper containers or stirrers.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 14 of 19

Section 11 - TOXICOLOGICAL INFORMATION ...

ACUTE HEALTH EFFECTS

SWALLOWED

Accidental ingestion of the material may be damaging to the health of the individual.

Ingestion of organic peroxides may produce nausea, vomiting, abdominal pain, intoxication, cyanosis and severe central nervous system depression. Toxic myocarditis may also occur.

Phthalates (aromatic dicarboxylic acid esters), in general, exhibit low toxicity, partly because of poor absorption but mainly as a result of rapid metabolism in which the esters are saponified to phthalic acid (which is rapidly excreted) and the parent alcohol (which is subsequently metabolised). The pathology of these compounds seems to be related to the released alcohol and its biological effects. The rate of absorption of ingested phthalate esters is influenced by the content of dietary fat. Ingested phthalate esters may to a lesser degree be absorbed as the monoester derivatives or in the case of di(2-ethylhexyl)phthalate, as the diester. Cumulative toxicity of the phthalates has been observed on repeated administration. Both di-n-octyl phthalate and di(2-ethylhexyl)phthalate were found to have 22-28 times greater toxicity (based on LD50s) following repeated administration to animals. The liver has been shown to be the target organ affected by the phthalates. In general phthalates have induced liver enlargement; this increase in liver weight has been attributed to rapid cell division (hyperplasia) along with the detachment of cells (hypertrophy). The increase in liver weight caused by phthalates has been found to reverse to normal or even below normal levels on prolonged exposure.

Exposure to phthalates, in general, has been found to be associated with a reduction in circulating cholesterol and serum triglyceride levels which accounted for a reduction in liver steroidogenesis. The phthalates also effect carbohydrate metabolism in the liver producing depleted glycogen electron transport inhibitors following interaction with mitochondria. Testicular atrophy produced in rats during feeding studies depends on the length and structure of the alcohol; in general the lower molecular weight esters produce the more severe effects. The toxicity of phthalic acid isomers decreases in the order o-phthalic acid, isophthalic acid and terephthalic acid. Phthalic acid is not metabolised but is excreted, unchanged, in the urine and faeces. Terephthalic acid appears to potentiate the biological effects of substances such as antibiotics, thiamine and sulfonamides.

EYE

Evidence exists, or practical experience predicts, that the material may cause eye irritation in a substantial number of individuals. Repeated or prolonged eye contact may cause inflammation (similar to windburn) characterised by a temporary redness of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

Eye contact with organic peroxides may produce superficial opacity, redness, swelling of the membranes, and burns on prolonged contact.

The material may be irritating to the eye, with prolonged contact causing inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 15 of 19

Section 11 - TOXICOLOGICAL INFORMATION ...

SKIN

The material produces mild skin irritation; evidence exists, or practical experience predicts, that the material either

- produces mild inflammation of the skin in a substantial number of individuals following direct contact, and/or
- produces significant, but mild, 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 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.

All organic peroxides are irritating to the skin and if allowed to remain on the skin, may produce inflammation; some are allergenic.

Skin contact is not thought to have harmful health effects (as classified under EC Directives); the material may still produce health damage following entry through wounds, lesions or abrasions.

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.

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.

INHALED

Inhalation of organic peroxide dusts or mists may produce irritation of the entire respiratory tract and induce asthma-like effects. Generalised over-exposure may produce tearing, salivation, lethargy, decreased respiration rate, difficulties in breathing, headache, weakness, tremor, even pulmonary oedema with intoxication similar to that produced by alcohol.

The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models). Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Not normally a hazard due to non-volatile nature of product

CHRONIC HEALTH EFFECTS

Chronic exposure to certain peroxides produces allergic dermatitis (with redness and scaling of the skin) and asthmatic wheezing. Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. Limited evidence shows that inhalation of the material is capable of inducing a sensitisation reaction in a significant number of individuals at a greater frequency than would be expected from the response of a normal population. Pulmonary sensitisation, resulting in hyperactive airway dysfunction and pulmonary allergy may be accompanied by fatigue, malaise and aching. Significant symptoms of exposure may persist for extended periods, even

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet
Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88
CD 2004/4 Page 16 of 19

Section 11 - TOXICOLOGICAL INFORMATION ...

after exposure ceases. Symptoms can be activated by a variety of nonspecific environmental stimuli such as automobile exhaust, perfumes and passive smoking. . Practical experience shows that skin contact with the material is capable either of inducing a sensitisation reaction in a substantial number of individuals, and/or of producing a positive response in experimental animals. Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis). A Russian study describes exposure by workers to mixed phthalates (and other plasticisers) - pain, numbness and spasms in the upper and lower extremities were related to duration of exposures. Symptoms usually developed after the sixth or seventh year of work. Neurological studies revealed the development of polyneuritis in about 30% of the workers involved in this study. About 30% of the workforce showed depression of the vestibular receptors. Because the study described mixed exposures it is difficult to determine what, if any, unique role was played by the phthalates. Increased incidences of anovulatory reproductive cycles and low oestrogen concentrations were reported among Russian women working with phthalate plasticisers; the abnormal cycles were associated with spontaneous abortion. The specific phthalates implicated, dose levels and other data were not reported. It has been alleged that the phthalates mimic or interfere with sex packaging) and are used as ingredients in paints, inks and adhesives. Their potential for entering the human body is marked. They have been added to a list of chemicals (including alkyl phenolics, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs) and dioxins) which are implicated in reducing sperm counts and fertility in males a phenomenon which has apparently arisen since the mid 1960s. Although the human foetus is "bathed" in naturally occurring oestrogens during pregnancy it is suggested that it has developed a protective mechanism against natural oestrogens but is not safe from synthetic variants. These tend to accumulate in body fats which sets them apart from the natural product. During early pregnancy, fats are broken down and may flood the body with concentrated pollutants. Bisphenol A is the isopropyl adduct of 4,4'-dihydroxydiphenyl oxide (DHDPO). A series of DHDPO analogues have been investigated as potential oestrogen receptor/anti-tumour drug carriers in the development of a class of therapeutic drugs called "cytostatic hormones". Oestrogenic activity is induced with 1 to 100 mg/kg body weight in animal models. Bisphenol A sealants are frequently used in dentistry for treatment of dental pits and fissures. Samples of saliva collected from dental patients during a 1-hour period following application contain the monomer. A bisphenol-A sealant has been shown to be oestrogenic in vitro; such sealants may represent an additional source of xenoestrogens in humans and may be the cause of additional concerns in children. Bisphenol A is foetotoxic when administered to pregnant mothers. A study of the effects of bisphenol-A on reproduction and fertility showed a significant decrease in seminal vesicle weight and sperm motility in treated male mice, the effects were present in parents and in the second generation of offspring when maintained at the same exposure level as their parents (4.37-17.5 mg/kg body weight). Olea N., et al; Environmental Health Perspectives, 104, 3, 1996 Additional concerns have been raised about the possible developmental effects on the foetus/embryo or neonate resulting from the leaching of bisphenol A from epoxy linings in metal cans which come in contact with food-stuffs. One of the constituents of the product has produced skin sensitisation reactions in either experimental animals and/or humans. Such reactions may be manifested as a localised reddening and/or urticaria (a hive-like asthma-like symptoms (shortness of breath, difficult breathing) and/or rhinitis (runny nose). This finding, however, remains speculative as the constituent has not been shown to raise specific antibodies in the blood in the same way as other confirmed allergens. The finding may also be confined to certain hypersensitive (atopic)

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet

Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88

CD 2004/4 Page 17 of 19

Section 11 - TOXICOLOGICAL INFORMATION ...

individuals who show heightened reactions to other allergens such as pollen.

AC100e Part B

DIBENZOYL PEROXIDE:

TOXICITY

Oral (rat) LD50: 7710 mg/kg

Inhalation (human) TCl₀: 12 mg/m³

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

Skin effects (MAK): very weak

(@ 50%)

IRRITATION

Eye (rabbit): 500 mg/24h - mild

BUTYL BENZYL PHTHALATE:

TOXICITY

Oral (rat) LD50: 2330 mg/kg

Oral (rat) LD50: 20400 mg/kg* **

Dermal (rabbit) LD50: >10,000 mg/kg*

Dermal (mammal) LD50: 13,100 mg/kg**

Reproductive effector in rats.

Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

The substance is classified by IARC as Group 3:

NOT classifiable as to its carcinogenicity to humans.

Evidence of carcinogenicity may be inadequate or limited in animal testing.

IRRITATION

Nil reported

[MONSANTO]**

[BASF]*

DICYCLOHEXYL PHTHALATE:

TOXICITY

Oral (rat) LD50: 30000 mg/kg

IRRITATION

Nil reported

SILICA, DIMETHYLSILOXANE TREATED:

TOXICITY

Oral (rat) LD50: >5000 mg/kg

IRRITATION

Skin: 0/8 non-irritating

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet

Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88

CD 2004/4 Page 18 of 19

Section 11 - TOXICOLOGICAL INFORMATION ...

Eyes: 0.7/110 @ 24hr Draize
non-irritating

[Cabot]

BISPHENOL A/ EPICHLOROHYDRIN RESIN:

TOXICITY IRRITATION

Oral (rat) LD50: 13600 mg/kg Nil reported

for RTECS No: SL 6475000:

(liquid grade)

Oral (rat) LD50: 11400 mg/kg

Eye (rabbit): 100 mg - mild

Intraperitoneal (rat) LD50: 2400 mg/kg

Oral (mouse) LD50: 15600 mg/kg

Intraperitoneal (mouse) LD50: 4000 mg/kg

Equivocal tumourigen by RTECS criteria

Somnolence, dyspnea, peritonitis

PHENOL/ FORMALDEHYDE/ EPICHLOROHYDRIN COPOLYMER:

TOXICITY IRRITATION

Oral (rat) LD50: >5000 mg/kg Nil reported

Section 12 - ECOLOGICAL INFORMATION

DO NOT discharge into sewer or waterways.

Water hazard class 2 (self-assessment): hazardous to water.

Section 13 - DISPOSAL CONSIDERATIONS

- Recycle wherever possible. Special hazard may exist - specialist advice may be required.
 - Consult manufacturer for recycling options.
 - Consult State Land Waste Management Authority for disposal.
 - Bury or incinerate residue at an approved site.
 - Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.
 - Puncture containers to prevent re-use and bury at an authorised landfill.
- Puncture containers to prevent re-use and bury at an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION



Shipping Name:

continued...

AC100E PART B

ChemWatch Material Safety Data Sheet

Issue Date: Mon 3-Feb-2003

CHEMWATCH 4929-88

CD 2004/4 Page 19 of 19

Section 14 - TRANSPORTATION INFORMATION ...

ORGANIC PEROXIDE TYPE E, SOLID

Dangerous Goods Class: 5.2

UN/NA Number: 3108

ADR Number: None

Packing Group: II

Labels Required: organic peroxide

Additional Shipping Information:

International Transport Regulations:

IMO: 5.2

HAZCHEM

2W

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE

None

REGULATIONS

dibenzoyl peroxide (CAS: 94-36-0) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)

butyl benzyl phthalate (CAS: 85-68-7) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)

dicyclohexyl phthalate (CAS: 84-61-7) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)

silica, dimethylsiloxane treated (CAS: 67762-90-7) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)

bisphenol A/ epichlorohydrin resin (CAS: 25068-38-6) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)

phenol/ formaldehyde/ epichlorohydrin copolymer (CAS: 9003-36-5) is found on the following regulatory lists:

Australian Inventory of Chemical Substances (AICS)

Section 16 - OTHER INFORMATION

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