

WATTYL CRYSTALAC CATALYST PART B

Chemwatch Material Safety Data Sheet (REVIEW)
Issue Date: 30-Mar-2006
NC317TCP

CHEMWATCH 54473
Version No:2.0

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

WATTYL CRYSTALAC CATALYST PART B

SYNONYMS

"clear catalyst accelerator hardener curing agent furniture coating"

PROPER SHIPPING NAME

FLAMMABLE LIQUID, CORROSIVE, N.O.S.

PRODUCT USE

Part B acid component of a two- pack, solvent based interior furniture finish. Requires that the two parts be mixed by hand or mixer before use, in accordance with manufacturers directions. Mix only as much as is required. Do not return the mixed material to the original containers. Application is usually by spray atomisation in a ventilated spray booth, after viscosity reduction with thinner. The use of a quantity of material in an unventilated or confined space may result in increased exposure and an irritating atmosphere developing. Before starting consider control of exposure by mechanical ventilation.

SUPPLIER

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AUS
Telephone: +61 2 9621 6255
Emergency Tel: 1800 039 008
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HAZARD RATINGS

Flammability	2
Toxicity	2
Body Contact	3
Reactivity	1
Chronic	2

SCALE: Min/Nil=0 Low=1 Moderate=2 High=3 Extreme=4

Section 2 - HAZARDS IDENTIFICATION

STATEMENT OF HAZARDOUS NATURE

HAZARDOUS SUBSTANCE. DANGEROUS GOODS. According to the Criteria of NOHSC, and the ADG Code.

POISONS SCHEDULE

S6 NZS3

RISK

Flammable.
Harmful by inhalation and if swallowed.
Irritating to respiratory system and skin.
Risk of serious damage to eyes.
HARMFUL-May cause lung damage if swallowed.

SAFETY

Keep away from sources of ignition. No smoking.
Do not breathe gas/fumes/vapour/spray.
wear suitable protective clothing.
use only in well ventilated areas.
keep container in a well ventilated place.

Vapours may cause drowsiness and dizziness. Skin contact may produce health damage*. Cumulative effects may result following exposure*. Possible respiratory sensitiser*. * (limited evidence).

Do not empty into drains.

To clean the floor and all objects contaminated by this material, use water and detergent.

Keep container tightly closed.

Keep away from food, drink and animal feeding stuffs.

Take off immediately all contaminated clothing. If swallowed, IMMEDIATELY contact Doctor or Poisons Information Centre. (show this container or label).

This material and its container must be disposed of as hazardous waste.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
n- butanol	71-36-3	> 60
toluene- 4- sulfonic acid	104-15-4	10-30

NOTE: Manufacturer has supplied full ingredient information to allow CHEMWATCH assessment.

Section 4 - FIRST AID MEASURES

SWALLOWED

Rinse mouth out with plenty of water.

For advice, contact a Poisons Information Centre or a doctor.

- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious
- Give water to rinse out mouth, then provide liquid slowly and as much as casualty can comfortably drink.
- Seek medical advice.

If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

IN ALL CASES SEEK MEDICAL ATTENTION.

EYE

If this product comes in contact with the eyes:

- Immediately hold eyelids apart and flush the eye continuously with running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Continue flushing until advised to stop by the Poisons Information Centre or a doctor, or for at least 15 minutes.
- Transport to hospital or doctor without delay.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

SKIN

If solids or aerosol mists are deposited upon the skin:

- Flush skin and hair with running water (and soap if available).
- Remove any adhering solids with industrial skin cleansing cream.
- DO NOT use solvents.
- Seek medical attention in the event of irritation.

INHALED

- If fumes or combustion products are inhaled remove from contaminated area.
- Lay patient down. Keep warm and rested.
- Prosthesis such as false teeth, which may block airway, should be removed, where possible, prior to initiating first aid procedures.
- 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.

NOTES TO PHYSICIAN

For acute or short term repeated exposures to strong acids:

- Airway problems may arise from laryngeal edema and inhalation exposure. Treat with 100% oxygen initially.
- Respiratory distress may require cricothyroidotomy if endotracheal intubation is contraindicated by excessive swelling
- Intravenous lines should be established immediately in all cases where there is evidence of circulatory compromise.
- Strong acids produce a coagulation necrosis characterised by formation of a coagulum (eschar) as a result of the dessicating action of the acid on proteins in specific tissues.

INGESTION:

- Immediate dilution (milk or water) within 30 minutes post ingestion is recommended.
- DO NOT attempt to neutralise the acid since exothermic reaction may extend the corrosive injury.
- Be careful to avoid further vomit since re-exposure of the mucosa to the acid is harmful. Limit fluids to one or two glasses in an adult.
- Charcoal has no place in acid management.
- Some authors suggest the use of lavage within 1 hour of ingestion.

SKIN:

- Skin lesions require copious saline irrigation. Treat chemical burns as thermal burns with non-adherent gauze and wrapping.
- Deep second-degree burns may benefit from topical silver sulfadiazine.

EYE:

- Eye injuries require retraction of the eyelids to ensure thorough irrigation of the conjunctival cul-de-sacs. Irrigation should last at least 20-30 minutes. DO NOT use neutralising agents or any other additives. Several litres of saline are required.
 - Cycloplegic drops, (1% cyclopentolate for short-term use or 5% homatropine for longer term use) antibiotic drops, vasoconstrictive agents or artificial tears may be indicated dependent on the severity of the injury.
 - Steroid eye drops should only be administered with the approval of a consulting ophthalmologist).
- [Ellenhorn and Barceloux: Medical Toxicology].

Section 5 - FIRE FIGHTING MEASURES

EXTINGUISHING MEDIA

- Alcohol stable foam.
- Dry chemical powder.
- Carbon dioxide.
- Water spray or fog - Large fires only.

FIRE FIGHTING

- Alert Fire Brigade and tell them location and nature of hazard.
- May be violently or explosively reactive.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water course.
- If safe, switch off electrical equipment until vapour fire hazard removed.
- 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.

FIRE/EXPLOSION HAZARD

- Liquid and vapour are flammable.
- Moderate fire hazard when exposed to heat or flame.
- Vapour forms an explosive mixture with air.
- Moderate explosion hazard when exposed to heat or flame.
- Vapour may travel a considerable distance to source of ignition.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO), carbon dioxide (CO₂) and minor amounts of sulfur oxides (SO_x).

FIRE INCOMPATIBILITY

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

HAZCHEM: 3W

Personal Protective Equipment

Breathing apparatus.
Chemical splash suit.

Section 6 - ACCIDENTAL RELEASE MEASURES

EMERGENCY PROCEDURES

MINOR SPILLS

- DO NOT touch the spill material . Remove all ignition sources.
- . Clean up all spills immediately.
 - . Avoid breathing vapours and contact with skin and eyes.
 - . Control personal contact by using protective equipment.
 - . Contain and absorb small quantities with vermiculite or other absorbent material.
 - . Wipe up.
 - . Collect residues in a flammable waste container.

MAJOR SPILLS

- DO NOT touch the spill material . . 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 breathing apparatus plus protective gloves.
 - . Prevent, by any means available, spillage from entering drains or water course.
 - . No smoking, naked lights or ignition sources.
 - . Increase ventilation.
 - . Stop leak if safe to do so.
 - . Water spray or fog may be used to disperse vapour.
 - . Contain spill with sand, earth or vermiculite.
 - . Use only spark-free shovels and explosion proof equipment.
 - . Collect recoverable product into labelled containers for recycling.
 - . Collect solid residues and seal in labelled drums for disposal.
 - . Wash area and prevent runoff into drains.
 - . After clean up operations, decontaminate and launder all protective clothing and equipment before storing and re-using.
 - . If contamination of drains or waterways occurs, advise emergency services.

PROTECTIVE ACTIONS FOR SPILL

From IERG (Canada/Australia)

Isolation Distance 50 metres
Downwind Protection Distance 300 metres
IERG Number 18

FOOTNOTES

- 1 PROTECTIVE ACTION ZONE is defined as the area in which people are at risk of harmful exposure. This assumes that random changes in wind direction confines the vapour plume to an area within 30 degrees either side of the predominant wind direction, resulting in a crosswind protective action distance to the downwind protective action distance.
- 2 PROTECTIVE ACTIONS should be initiated to the extent possible, beginning with those closest to the site and working away from the site in the downwind direction. Within the protective action zone a level vapour concentration may exist resulting in nearly all unprotected persons becoming incapacitated 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 probability of localised wind reversal may expose nearly all persons without appropriate protective 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 (jerrycan) 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 132 is taken from the US DOT emergency response guide book.
- 6 IERG information is derived from CANUTEC - Transport Canada.

EMERGENCY RESPONSE PLANNING GUIDELINES (ERPG)

The maximum airborne concentration below which it is believed that nearly all individuals could be exposed for up to one hour WITHOUT experiencing or developing

life-threatening health effects is:
n-butanol 1400 ppm

irreversible or other serious effects or symptoms which could impair an individual's ability to take protective action is:
n-butanol 50 ppm

other than mild, transient adverse effects without perceiving a clearly defined odour is:
n-butanol 50 ppm

The threshold concentration below which most people will experience no appreciable risk of health effects is:
n-butanol 50 ppm

American Industrial Hygiene Association (AIHA)

Ingredients considered according to the following cutoffs

Very Toxic (T+)	>= 0.1%	Toxic (T)	>= 3.0%
R50	>= 0.25%	Corrosive (C)	>= 5.0%
R51	>= 2.5%		
else	>= 10%		

where percentage is percentage of ingredient found in the mixture

SAFE STORAGE WITH OTHER CLASSIFIED CHEMICALS

+: May be stored together
 0: May be stored together with specific preventions
 X: Must not be stored together

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

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

Avoid generating and breathing mist.
 Refer also to protective measures for the other component used with the product. Read both MSDS before using; store and attach MSDS together.

- 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, heat or ignition sources.
- When handling, DO NOT eat, drink or smoke.
- Vapour may ignite on pumping or pouring due to static electricity.
- DO NOT use plastic buckets.
- Earth and secure metal containers when dispensing or pouring product.
- Use spark-free tools when handling.
- Avoid contact with incompatible materials.
- Keep containers securely sealed.
- 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 storing and handling recommendations.
- Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.

DO NOT spray directly on humans, exposed food or food utensils.

SUITABLE CONTAINER

- Polyethylene or polypropylene container.
- Packing as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

STORAGE INCOMPATIBILITY

Avoid storage with oxidisers.
 Avoid contamination of water, foodstuffs, feed or seed.

STORAGE REQUIREMENTS

- Store in approved flammable liquid storage area.
- No smoking, naked lights/ignition sources.
- Keep containers securely sealed.
- Store away from incompatible materials in a cool, dry, well-ventilated area.
- Protect containers against physical damage and check regularly for leaks.
- Observe manufacturer's storing and handling recommendations.

DO NOT use mild steel or galvanised containers.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

Source	Material	TWA ppm	TWA mg/m?	STEL ppm	STEL mg/m?	Peak ppm	Peak mg/m?	TWA F/CC
Source	Material	TWA ppm	TWA mg/m?	STEL ppm	STEL mg/m?	Peak ppm	Peak mg/m?	TWA F/CC

Australia n-butanol
 Exposure (n-Butyl
 Standards alcohol) 50 152

The following materials had no OELs on our records
 ? toluene-4-sulfonic acid: CAS:104-15-4

EMERGENCY EXPOSURE LIMITS

Material Revised IDLH Value (mg/m3) Revised IDLH Value (ppm)
 n-butanol 1,400 [LEL]

NOTES

Values marked LEL indicate that the IDLH was based on 10% of the lower explosive limit for safety considerations even though the relevant toxicological data indicated that irreversible health effects or impairment of escape existed only at higher concentrations.

ODOUR SAFETY FACTOR (OSF)

OSF=17 (toluene-4-sulfonic acid)

Exposed individuals are NOT reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either class C, D or E.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

MATERIAL DATA

None assigned. Refer to individual constituents.

INGREDIENT DATA

N-BUTANOL:

Exposed individuals are reasonably expected to be warned, by smell, that the Exposure Standard is being exceeded.

Odour Safety Factor (OSF) is determined to fall into either Class A or B.

The Odour Safety Factor (OSF) is defined as:

OSF= Exposure Standard (TWA) ppm/ Odour Threshold value (OTV) ppm

Classification into classes follows:

Class	OSF	Description
A	550	Over 90% of exposed individuals are aware by smell that the Exposure Standard (TLV-TWA for example) is being reached, even

		when distracted by working activities
B	26-550	As "A" for 50-90% of persons being distracted
C	1-26	As "A" for less than 50% of persons being distracted
D	0.18-1	10-50% of persons aware of being tested perceive by smell that the Exposure Standard is being reached
E	<0.18	As "D" for less than 10% of persons aware of being tested

Odour Threshold value: 0.12-3.4 ppm (detection), 1.0-3.5 ppm (recognition)

NOTE: Detector tubes for n-butanol, measuring in excess of 5 ppm are commercially available.

Exposure at or below the TLV-TWA is thought to provide protection against hearing loss due to vestibular and auditory nerve damage in younger workers and to protect against the significant risk of headache and irritation.

25 ppm may produce mild irritation of the respiratory tract

50 ppm may produce headache and vertigo.

Higher concentrations may produce marked irritation, sore throat, coughing, nausea, shortness of breath, pulmonary injury and central nervous system depression characterised by headache, dizziness, dullness and drowsiness.

6000 ppm may produce giddiness, prostration, narcosis, ataxia, and death.

TOLUENE-4-SULFONIC ACID:

No exposure limits set by NOHSC or ACGIH.

PERSONAL PROTECTION

EYE

- Safety glasses with side shields; or as required,
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens 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].

HANDS/FEET

- Barrier cream with polyethylene gloves or Butyl rubber gloves or Nitrile rubber gloves or wear chemical protective gloves, eg. PVC.
- wear safety footwear.
- DO NOT use solvent to clean the skin . . Skin cleansing cream.

OTHER

- Overalls.
- Eyewash unit.

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	-
1000	50	-	A-AUS

5000	50	Airline *	-
5000	100	-	A-2
10000	100	-	A-3
	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.

ENGINEERING CONTROLS

Use in a well-ventilated area.

Spraying to be carried out in conditions conforming to local state regulations.

Unprotected personnel must vacate the spraying area.

General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in special circumstances. If risk of overexposure exists, wear approved respirator. Supplied-air type respirator may be required in special circumstances. Correct fit is essential to ensure adequate protection. Provide adequate ventilation in warehouses and enclosed storage areas. 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:
solvent, vapours, degreasing etc., evaporating from tank (in still air).	0.25-0.5 m/s (50-100 f/min)
aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)
direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)
grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion)	2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range	Upper end of the range
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents
2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity
3: Intermittent, low production.	3: High production, heavy use
4: Large hood or large air mass in motion	4: Small hood-local control only

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. In confined spaces where there is inadequate ventilation, wear full-face air supplied breathing apparatus.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Clear colourless flammable acidic liquid with a strong solvent odour; partially mixes with water.

PHYSICAL PROPERTIES

Liquid.

Does not mix with water.

Floats on water.

Corrosive.

Molecular weight: Not applicable
Melting Range (?C): Not available.
Solubility in water (g/L): Immiscible
pH (1% solution): Not available
Volatile Component (%vol): >60
Relative Vapour Density (air=1): >1
Lower Explosive Limit (%): 1.4
Autoignition Temp (?C): 250 approx
State: Liquid

Boiling Range (?C): 108-114
Specific Gravity (water=1): 0.84-0.86
pH (as supplied): 1-2
Vapour Pressure (kPa): Not available
Evaporation Rate: Slow
Flash Point (?C): 29 n-butanol
Upper Explosive Limit (%): 11.2
Decomposition Temp (?C): Not available

Section 10 - CHEMICAL STABILITY AND REACTIVITY INFORMATION

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

Section 11 - TOXICOLOGICAL INFORMATION

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

The material is considered to be harmful by all exposure routes. Considered an unlikely route of entry in commercial/industrial environments. The liquid is highly discomforting and may be toxic if swallowed and is capable of causing burns to mouth, throat, oesophagus, with extreme discomfort, pain. Ingestion may result in nausea, pain, vomiting. Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.

EYE

The liquid produces a high level of eye discomfort and is capable of causing pain and severe conjunctivitis. Corneal injury may develop, with possible permanent impairment of vision, if not promptly and adequately treated. The vapour is discomforting to the eyes. The material may produce severe irritation to the eye causing pronounced inflammation. Repeated or prolonged exposure to irritants may produce conjunctivitis.

SKIN

The liquid is highly discomforting to the skin and may cause skin reactions which may lead to dermatitis and blisters or burns if contact is prolonged and the material contains a component that may be absorbed through the skin. Toxic effects may result from skin absorption. Bare unprotected skin should not be exposed to this material. The material may accentuate any pre-existing dermatitis condition. 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

The vapour is discomforting to the upper respiratory tract and may be harmful if inhaled and if exposure is prolonged. Inhalation hazard is increased at higher temperatures. Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination. If exposure to highly concentrated solvent atmosphere is prolonged this may lead to narcosis, unconsciousness, even coma and possible death. Inhalation of vapour may aggravate a pre-existing respiratory condition such as asthma, bronchitis, emphysema. The material may produce respiratory tract irritation. Symptoms of pulmonary irritation

may include coughing, wheezing, laryngitis, shortness of breath, headache, nausea, and a burning sensation. Unlike most organs, the lung can respond to a chemical insult or a chemical agent, by first removing or neutralising the irritant and then repairing the damage (inflammation of the lungs may be a consequence). The repair process (which initially developed to protect mammalian lungs from foreign matter and antigens) may, however, cause further damage to the lungs (fibrosis for example) when activated by hazardous chemicals. Often, this results in an impairment of gas exchange, the primary function of the lungs. Therefore prolonged exposure to respiratory irritants may cause sustained breathing difficulties.

CHRONIC HEALTH EFFECTS

Principal routes of exposure are usually by inhalation of vapour/spray mist, inhalation of vapour and skin contact with the material. Chronic solvent inhalation exposures may result in nervous system impairment and liver and blood changes. [PATTYS]. Prolonged or continuous skin contact with the liquid may cause defatting with drying, cracking, irritation and dermatitis following. As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

TOXICITY AND IRRITATION

Not available. Refer to individual constituents.

N-BUTANOL:

TOXICITY

Oral (rat) LD50: 790 mg/kg
 Inhalation (human) TCLo: 25 ppm
 Inhalation (rat) LC50: 8000 ppm/4h
 Dermal (rabbit) LD50: 3400 mg/kg
 Inhalation (human) TCLo: 86000 mg/m³

IRRITATION

Skin (rabbit): 405 mg/24h-Moderate
 Eye (human): 50 ppm - Irritant
 Eye (rabbit): 1.6 mg-SEVERE
 Eye (rabbit): 24 mg/24h-SEVERE

TOLUENE-4-SULFONIC ACID:

TOXICITY

Oral (Rat) LD50: 2480 mg/kg

IRRITATION

Section 12 - ECOLOGICAL INFORMATION

Marine Pollutant: Not Determined

No data for Watty1 Crystalac Catalyst Part B.
 Refer to data for ingredients, which follows:

N-BUTANOL:

Fish LC50 (96hr.) (mg/l):	1910- 1940
Daphnia magna EC50 (48hr.) (mg/l):	1983
Algae IC50 (72hr.) (mg/l):	650
log Kow (Prager 1995):	0.88
log Kow (Sangster 1997):	0.84
log Pow (Verschueren 1983):	0.88
Half- life Soil - High (hours):	168
Half- life Soil - Low (hours):	24
Half- life Air - High (hours):	87.7
Half- life Air - Low (hours):	8.8
Half- life Surface water - High (hours):	168
Half- life Surface water - Low (hours):	24
Half- life Ground water - High (hours):	1296
Half- life Ground water - Low (hours):	48
Aqueous biodegradation - Aerobic - High (hours):	168
Aqueous biodegradation - Aerobic - Low (hours):	24
Aqueous biodegradation - Anaerobic - High (hours):	1296
Aqueous biodegradation - Anaerobic - Low (hours):	96
Aqueous biodegradation - Removal secondary treatment - High (hours):	99%
Aqueous biodegradation - Removal secondary treatment - Low (hours):	31%
Photooxidation half- life water - High (hours):	104000
Photooxidation half- life water - Low (hours):	2602
Photooxidation half- life air - High (hours):	87.7
Photooxidation half- life air - Low (hours):	8.8

DO NOT discharge into sewer or waterways.

log Kow: 0.88

Koc: 71.6

Half-life (hr) air: 5-52

Half-life (hr) H₂O surface water: 2.4-3022

Henry's atm m³ /mol: 5.57E-06

BOD 5 if unstated: 1.1-2.04,33%

COD: 1.9,92%

ThOD: 2.594

Toxicity Fish: LD100(24)1.4g/L, LC50(96)1.91g/L

Toxicity invertebrate: cell mult. inhib. 8-650mg/L

Bioaccumulation: not sig

Nitri. inhib.: 50% inhib at 8200mg/L

Effects on algae and plankton: cell mult. inhib. 100-875mg/L

Degradation Biological: sig

processes Abiotic: RxnOH*

TOLUENE-4-SULFONIC ACID:
 Prevent, by any means available, spillage from entering drains or water courses.
 DO NOT discharge into sewer or waterways.
 BOD 5 if unstated: nil
 Toxicity Fish: LC50(96)164mg/L
 processes Abiotic: hydro1,Rxn OH*

Section 13 - DISPOSAL CONSIDERATIONS

- Consult manufacturer for recycling options and recycle where possible .
- Consult State Land Waste Management Authority for disposal.
- Incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

Section 14 - TRANSPORTATION INFORMATION

Labels Required: FLAMMABLE LIQUID,CORROSIVE
 HAZCHEM: 3W

UNDG:
 Dangerous Goods Class: 3 Subrisk:
 UN Number: 2924 Packing Group:

Shipping Name:FLAMMABLE LIQUID, CORROSIVE, N.O.S.

Air Transport IATA:

ICAO/IATA Class: 3 ICAO/IATA Subrisk:
 UN/ID Number: 2924 Packing Group:
 ERG Code: 3CH

Shipping name:FLAMMABLE LIQUID, CORROSIVE, N.O.S.

Maritime Transport IMDG:

IMDG Class: 3 IMDG Subrisk: 8
 UN Number: 2924 Packing Group: III
 EMS Number: F-E,S-C Marine Pollutant: Not Determine

Shipping name:FLAMMABLE LIQUID, CORROSIVE, N.O.S.

Section 15 - REGULATORY INFORMATION

POISONS SCHEDULE: S6 NZS3

REGULATIONS

n-butanol (CAS: 71-36-3) is found on the following regulatory lists;
 Australia Exposure Standards
 Australia High Volume Industrial Chemical List (HVICL)
 Australia Inventory of Chemical Substances (AICS)
 IMO MARPOL 73/78 (Annex II) - List of Other Liquid Substances
 International Council of Chemical Associations (ICCA) - High Production Volume List
 OECD Representative List of High Production volume (HPV) Chemicals

toluene-4-sulfonic acid (CAS: 104-15-4) is found on the following regulatory lists;
 Australia Inventory of Chemical Substances (AICS)
 International Council of Chemical Associations (ICCA) - High Production Volume List
 OECD Representative List of High Production Volume (HPV) Chemicals

No data available for n-butanol as CAS: 220713-25-7, CAS: 42031-19-6, CAS: 107569-51-7.

Section 16 - OTHER INFORMATION

INGREDIENTS WITH MULTIPLE CAS NUMBERS

Ingredient Name	CAS
n-butanol	71-36-3, 220713-25-7, 42031-19-6, 107569-51-7

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