SAFETY DATA SHEETS (SDS)
Enviro 850 PUR TC Part A

Version: 3

Issued by: Envirosystems Technologies

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Hazard Identifiers

SECTION 1 – IDENTIFICATION OF MATERIAL & SUPPLIER

1.1 **Product Name:** Enviro 850 PUR TC Part A
Manufacturer's Product Code: N/A
1.2 **Recommended Use:** Part A of a two/three component coating
1.3 **Company:** Envirosystems Technologies Pty Ltd
Address: 295 Princes Highway St Peters, NSW 2044.
Website: www.envirosystems.com.au
Telephone: +61 2 85958699 (business hours)
Fax: +61 2 85958660
1.4 **Emergency Telephone:** Info Safe – 1800 638 556, Poisons Centre – 131126

Other Information: All information in this SDS is to the best of our knowledge at time of publication. Users of this product should fully review this SDS prior to use to ensure best safety practices. Further information and or clarification can be obtained by contacting our technical department on the above telephone number.

SECTION 2 – HAZARDS IDENTIFICATION

2.1 **Hazard Classification:** Classified as **Hazardous** according to WHS Regulations, Australian GHS criteria and a **Non-Dangerous Goods** according to the Australian Dangerous Goods Code.

Class	Category
Skin Corrosion / irritation	3
Skin Sensitization	1B
Specific target organ toxicity (Single)	3
Specific target organ toxicity (Repeated)	2
Hazardous to the aquatic environment - Chronic	3

2.2 **Label Elements**

Signal word **Warning**

H-code	Hazard Statements
H316	Causes mild skin irritation
H317	May cause an allergic skin reaction
H351	Suspected of causing cancer
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H373	May cause damage to organs through prolonged or repeated exposure

H412	Harmful to aquatic life with long lasting effects
P-Code	**Precautionary Statement - Prevention**
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P261	Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P273	Avoid release to the environment
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P-Code	**Precautionary Statement - Response**
P312	Call a POISON CENTER or doctor/ physician if you feel unwell.
P304, P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P303, P361, P353	IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P333, P313	If skin irritation or rash occurs: Get medical advice/ attention.
P337, P313	If eye irritation persists: Get medical advice/ attention.
P362, P364	Take off contaminated clothing and wash it before reuse
P370, P378	In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.
P-Code	**Precautionary Statement - Storage**
P403, P233	Store in a well-ventilated place. Keep container tightly closed.
P-Code	**Precautionary Statement - Disposal**
P501	Dispose of contents / containers to hazardous or special waste collection point. In accordance with local regulation

2.3 Other Hazards None known

SECTION 3 – COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

3.2 Mixtures See section below for Mixtures

CAS No.	Material	Content %
136210-32-7	Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester	10-30
136210-30-5	Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester	20-40
623-91-6	Fumaric acid diethyl ester	<2
1330-20-7	Xylenes (o-, m-, p- isomers)	<2

100-41-4	Ethyl benzene	<1
108-65-6	2-methoxy-1-methylethyl acetate	<1
123-86-4	n-butyl acetate	<1

SECTION 4 – FIRST AID MEASURES

4.1 Description of first aid measures

General Advice:
Soiled, soaked clothing and shoes must be immediately removed, decontaminated and disposed of.
Ingestion:
DO NOT induce the patient to vomit, medical advice is required. Take victim immediately to hospital. Keep respiratory tract clear. Do not give milk or alcoholic beverages
Inhalation:
Take the person into the fresh air and keep him warm, let him rest; if there is difficulty in breathing, medical advice is required.
Eye Contact:
Hold the eyes open and rinse with preferably lukewarm water for a sufficiently long period of time (at least 10 minutes). Contact an ophthalmologist.
Skin Contact:
In the event of contact with the skin, preferably wash with a cleanser based on polyethylene glycol or with plenty of warm water and soap. Consult a doctor in the event of a skin reaction.

4.2 Most important symptoms and effects, both acute and delayed

Any relevant information can be found in other parts of this section and in sections 2 and 11.

4.3 Advice for doctor

Treat symptomatically

SECTION 5 – FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:
Carbon dioxide (CO2), Foam, extinguishing powder, in cases of larger fires, water spray should be used.

Unsuitable extinguishing media that may not be used for safety reasons:
High volume water jet

5.2 Special hazards arising from the substance or mixture

Burning releases carbon monoxide, carbon dioxide, oxides of nitrogen and traces of hydrogen cyanide. In the event of fire and/or explosion do not breathe fumes. Fire in vicinity poses risk of pressure build-up and rupture. Containers at risk from fire should be cooled with water and, if possible, removed from the danger area.

5.3 Advice for firefighters

Wear full body protective clothing with breathing apparatus. Prevent, by any means available, spillage from entering drains or water course. 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.

SECTION 6 – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective

Secure the area. Wear personal protection equipment (see section 8). Keep

	equipment and emergency procedures	unprotected persons away. Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. If material is released indicate risk of slipping. Do not walk through spilled material.
6.2	**Environmental precautions**	Do not discharge into sewers or waterways or soil.
6.3	**Methods and material for containment and cleaning up**	Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations.
6.4	**Reference to other sections**	Relevant information in other sections has to be considered. This applies in particular for information given on personal protective equipment (section 8) and on disposal (section 13).

SECTION 7 – HANDLING & STORAGE

7.1 Precautions for safe handling

Ensure thorough ventilation of stores and work areas. Handle in accordance with good industrial hygiene and safety practice. When using do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift.

The personal protective measures described in section 8 must be observed. The precautions required in the handling of isocyanates must be taken. Avoid contact with skin and eyes and the inhalation of vapor.

7.2 Conditions for safe storage

Storage Requirements:
Keep container tightly closed, store in a cool, dry area
Storage Incompatibility:
Not known
Suitable containers:
Original packing as recommended by manufacturer.
Temperature Conditions:
5º to 35º C
Protection from weather:
Store undercover and away from frost and moisture

7.3 Specific end use(s)

Once mixed with part B and applied, produces a hard wearing, durable surface suitable for commercial and industrial applications.

7.4 Regulations and standards (Australia):

N/A

SECTION 8 – EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Emergency limits:

Ingredient	STEL	TWA	
Xylene	441 mg/m3	220/m3	
ethylbenzene	200ppm	100ppm	
2-methoxy-1- methylethyl acetate	100ppm	50ppm	
n-butyl acetate	200ppm	150ppm	

8.2 Exposure controls

General protection and hygiene measures:
Avoid exposure. Avoid contact with eyes and skin. Do not inhale gases/vapours/aerosols. Do not eat, drink or smoke when handling. Wash hands at the end of work and before eating. Keep working clothes separately. Remove

contaminated, soaked clothing immediately. Clean work areas regularly. 1st monitor air quality should be checked regularly in accordance with AS/NZS 1715: Selection, use and maintenance of respiratory protective equipment (AS/NZS 1715). Then use dilution ventilation systems to dilute and displace contaminated air with fresh air supplied to the work area by mechanical exhaust fans (make sure explosion and spark proof equipment as solvents are used) or natural air currents through doors, windows or other openings in the building..

Personal protection equipment:

Respiratory protection

When engineering controls are not effective in controlling airborne exposure, then respiratory equipment should be used to protect against airborne contaminant (organic filter of sufficient capacity eg 3M™ Organic Vapor Cartridges, 6051). The appropriate respiratory equipment can be determined based upon actual airborne concentration (e.g. xylene, isocyanates) and **can vary** depending on individual circumstances.

In case of hypersensitivity of the respiratory tract (e.g. asthmatics and those who suffer from chronic bronchitis) it is inadvisable to work with the product.

Eye protection

Chemical goggles. Full face shield may be required for supplementary but never for primary protection of eyes. Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.

Hand protection

Suitable materials for safety gloves; EN 374:
Fluorinated rubber - FKM: thickness >=0,4mm; breakthrough time >=480min.
Laminate glove - PE/EVAL/PE; breakthrough time >=480 min.
Recommendation: contaminated gloves should be disposed of.

Skin protection

Low static overalls and PVC apron for mixing chemicals. Barrier are ok is some circumstances. Full body spray suit is required for spraying.

Other Information

Use barrier creams to protect skin from contact with the material. Always wash hands before smoking, eating, drinking or using the toilet and after finishing work. Observe the usual precautions when handling chemicals.

8.3 Further information for system design and engineering measures

Ventilation is recommended under normal use conditions. State regulations on speed and direction of airflow away from operators must be observed. Keep containers closed when not in use.

SECTION 9 – PHYSICAL & CHEMICAL PROPERTIES

9.1	**Odour:**	Not Available
	Colour:	Grey and Pastel shades
	Physical State:	Liquid
	Flash Point:	>200ºC
	Boiling Point:	Not Available
	Melting Point:	Not Available
	Specific Gravity:	1.62 g/cm^3
	pH:	N/A
	Solubility in Water (g/L):	Insoluble
	Flammability:	Not Available
	Lower Limit:	Not Available
	Higher Limit:	Not Available
	Vapour Pressure:	Not Available

	Vapour Density (Air = 1)	Not Available
	Auto-ignition temperature	Not Available
	Ignition temperature	Not Available
	Decomposition temperature	Not Available
9.2	**Other information**	Not available

SECTION 10 – STABILITY AND REACTIVITY

10.1 -3	**Reactivity; Chemical stability; Possibility of hazardous reactions**	If stored and handled in accordance with standard industrial practices not hazardous reactions are known. Vapours may form explosive mixture with air.
10.4	**Conditions to avoid**	Heat, flames and sparks
10.5	**Incompatible materials**	Strong oxidizing agents
10.6	**Hazardous decomposition products**	No hazardous decomposition products when stored and handled correctly. But Oxides of carbon and other possibly toxic fumes from fire.

SECTION 11 – TOXICOLOGICAL INFORMATION

Acute Toxicity/Effects

Acute toxicity, oral
Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
D50 rat: > 2.000 mg/kg Method: Directive 67/548/EEC, Annex V, B.1.

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
LD50 rat: > 2.000 mg/kg Method: Directive 67/548/EEC, Annex V, B.1. oxicological studies of a comparable product.

Xylene
LD50 (Rat, male): 3.523 mg/kg Method: Directive 67/548/EEC, Annex V, B.1.

n-butyl acetate
LD50 (Rat, male): > 1.000 mg/kg Method: OECD Test Guideline 423

2-methoxy-1-methylethyl acetate
LD50 (Rat, female): > 5.000 mg/kg Method: OECD Test Guideline 401 GLP: yes

Acute toxicity, dermal
Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
LD50 rat: > 2.000 mg/kg Method: Directive 67/548/EEC, Annex V, B.3.

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
LD50 rat: > 2.000 mg/kg Method: Directive 67/548/EEC, Annex V, B.3.
Toxicological studies of a comparable product.

n-butyl acetate
LD50 (Rabbit, male and female): > 14.000 mg/kg Method: OECD Test Guideline 402

Acute toxicity, inhalation
Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
LC50 rat, male/female: > 4,224 mg/l, 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
LC50 rat, male/female: > 4,224 mg/l, 4 h Test atmosphere: dust/mist Method: OECD Test Guideline 403 Toxicological studies of a comparable product.

n-butyl acetate
LC50 (Rat, male and female): > 21 mg/l Exposure time: 4 h Test atmosphere: vapour Method: OECD Test Guideline 403 GLP: yes

Primary skin irritation:
Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
Species: rabbit Result: slight irritant Classification: No skin irritation Method: OECD Test Guideline 404

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
Species: rabbit Result: slight irritant Classification: No skin irritation Method: OECD Test Guideline 404 Toxicological studies of a comparable product.

n-butyl acetate
Species: Rabbit Method: OECD Test Guideline 404 Result: No skin irritation

2-methoxy-1-methylethyl acetate
Species: Rabbit Method: OECD Test Guideline 404 Result: No skin irritation GLP: yes

Serious eye damage/eye irritation:
Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
Species: rabbit Result: slight irritant Classification: No eye irritation Method: OECD Test Guideline 405

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
Species: rabbit Result: slight irritant Classification: No eye irritation Method: OECD Test Guideline 405 Toxicological studies of a comparable product.

n-butyl acetate
Species: Rabbit Method: OECD Test Guideline 405 Result: No eye irritation GLP: yes

Skin sensitization
n-butyl acetate
Test Type: Buehler Test Species: Guinea pig Method: OECD Test Guideline 406 Result: Does not cause skin sensitisation.

Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
Magnusson/Kligmann (maximizing test) Species: Guinea pig Result: positive Classification: H317: May cause sensitization by skin contact (Sub cat. 1B) Method: OECD Test Guideline 406

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
Magnusson/Kligmann (maximizing test) Species: Guinea pig Result: positive Classification: H317: May cause sensitization by skin contact (Sub cat. 1B) Method: OECD Test Guideline 406 Toxicological studies of a comparable product.

Respiratory sensitization
Toxicological studies on the product are not yet available

Chronic Toxicity/Effects

Repeated dose toxicity
Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
NOAEL: 1.000 mg/kg Application Route: Subacute oral toxicity
Species: rat Dose Levels: 0 - 40 - 200 - 1000 mg/kg Method: OECD Test Guideline 407. Evidence of damage to organs other than the organs of respiration was not found.

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
NOAEL: 1.000 mg/kg Application Route: Subacute oral toxicity
Species: rat Dose Levels: 0 - 40 - 200 - 1.000 mg/kg Method: OECD Test Guideline 407 Toxicological studies of a comparable product.

Genetic toxicity in vitro
Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
Test type: Salmonella/microsome test (Ames test) Result: No indication of mutagenic effects. Method: OECD Test Guideline 471 Toxicological studies of a comparable product.

Test type: Chromosome aberration test in vitro Result: negative Method: OECD Test Guideline 473 Toxicological studies of a comparable product.

Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
Test type: Salmonella/microsome test (Ames test) Result: No indication of mutagenic effects. Method: OECD Test Guideline 471

Test type: Chromosome aberration test in vitro
Result: negative Method: OECD Test Guideline 473

Genetic toxicity in vivo
Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
Test type: Micronucleus test Species: Mouse Result: negative Method: OECD Test Guideline 474 Toxicological studies of a comparable product.

Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
Test type: Micronucleus test species: Mouse Result: negative Method: OECD Test Guideline 474

Carcinogenicity
No data available

Reproductive toxicity/ Teratogenicity
Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
NOAEL (teratogenicity): 1.000 mg/kg
NOAEL (maternal): 1.000 mg/kg
NOAEL (developmental toxicity): 1.000 mg/kg
Species: rat, female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 1000 mg/kg
Method: OECD Test Guideline 414
Studies of a comparable product.

Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
NOAEL (teratogenicity): 1.000 mg/kg
NOAEL (maternal): 1.000 mg/kg
NOAEL (developmental toxicity): 1.000 mg/kg

Species: rat, female
Application Route: Oral
Dose Levels: 0 - 100 - 300 - 1000 mg/kg
Method: OECD Test Guideline 414

STOT evaluation – one-time exposure
No data available.

STOT evaluation – repeated exposure
No data available.

Aspiration toxicity:
No data available.

Toxicology Assessment:
Sensitization: May cause sensitization by skin contact.

Additional: None.

SECTION 12 – ECOLOGICAL INFORMATION

12.1 Toxicity

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
Acute Fish toxicity
LC50 66 mg/l Species: Danio rerio (zebra fish) Exposure duration: 96 h Method: OECD Test Guideline 203 Ecotoxicological reports on a comparable product

Acute toxicity for daphnia
EC50 88,6 mg/l Species: Daphnia magna (Water flea) Exposure duration: 48 h Method: Proposal from the German UBA May 1984 Studies of a comparable product.

Chronic toxicity to daphnia
NOEC (Reproduction) 0,01 mg/l Species: Daphnia magna (Water flea) Exposure duration: 21 d Method: Directive 67/548/EEC, Annex V, C.20. Studies of a comparable product.

Acute toxicity for algae
ErC50 113 mg/l Species: scenedesmus subspicatus Exposure duration: 72 h Method: Directive 67/548/EEC, Annex V, C.3. Ecotoxicological reports on a comparable product

Toxicity to soil dwelling organisms
NOEC (mortality) >= 1.000 mg/kg Species: Eisenia fetida (earthworms) Exposure duration: 14 d Method: OECD Test Guideline 207 Studies of a comparable product.

Toxicity to terrestrial plants
NOEC (seedling emergence) >= 100 mg/kg Species: Allium cepa (onion) Test period: 14 d Method: OECD Test Guideline 208 Studies of a comparable product.

NOEC (seedling emergence) >= 100 mg/kg Species: Avena sativa (oats) Test period: 14 d Method: OECD Test Guideline 208 Studies of a comparable product.

NOEC (seedling emergence) >= 100 mg/kg Species: Brassica napus (rape) Test period: 14 d Method: OECD Test Guideline 208 Studies of a comparable product.

Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-

tetraethyl ester
Acute Fish toxicity
LC50 66 mg/l Species: Danio rerio (zebra fish) Exposure duration: 96 h Method: OECD Test Guideline 203

Acute toxicity for daphnia
EC50 88,6 mg/l Species: Daphnia magna (Water flea) Exposure duration: 48 h Method: Proposal from the German UBA May 1984

Chronic toxicity to daphnia
NOEC (Reproduction) 0,01 mg/l Species: Daphnia magna (Water flea) Exposure duration: 21 d Method: Directive 67/548/EEC, Annex V, C.20.

Acute toxicity for algae
ErC50 113 mg/l Species: scenedesmus subspicatus Exposure duration: 72 h Method: Directive 67/548/EEC, Annex V, C.3.

Toxicity to soil dwelling organisms
NOEC (mortality) >= 1.000 mg/kg Species: Eisenia fetida (earthworms) Exposure duration: 14 d Method: OECD Test Guideline 207

Toxicity to terrestrial plants
NOEC (seedling emergence) >= 100 mg/kg Species: Avena sativa (oats) Test period: 14 d Method: OECD Test Guideline 208

NOEC (seedling emergence) >= 100 mg/kg Species: Allium cepa (onion) Test period: 14 d Method: OECD Test Guideline 208

NOEC (seedling emergence) >= 100 mg/kg Species: Brassica napus (rape) Test period: 14 d Method: OECD Test Guideline 208

Xylene, mixture of isomers
Toxicity to algae
EC50 (Selenastrum capricornutum (green algae)): 2,2 mg/l Exposure time: 72 h Test Type: static test Method: OECD Test Guideline 201 GLP: yes

n-butyl acetate
Toxicity to fish
LC50 (Pimephales promelas (fathead minnow)): 18 mg/l Exposure time: 96 h Method: OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates
EC50 (Daphnia magna (Water flea)): 44 mg/l Exposure time: 48 h

Toxicity to algae
ErC50 (Scenedesmus subspicatus): 675 mg/l Exposure time: 72 h

Chronic Toxicity to daphnia and other aquatic invertebrates
NOEC: 23 mg/l Exposure time: 21 d End point: Reproduction Species: Daphnia magna (Water flea) Method: OECD Test Guideline 211

Ecotoxicology Assessment
Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester and Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
Acute aquatic toxicity: Harmful to aquatic life.
Chronic aquatic toxicity: Very toxic to aquatic life with long lasting effects.
Impact on Sewage Treatment: Because of the low bacterial toxicity, there is no risk of an adverse effect on the performance of biological waste water treatment

plants.

Microorganisms/Effect on sludge

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
EC50 3.110 mg/l Species: activated sludge Exposure duration: 3 h Method: ISO test method 8192-1986 E Ecotoxicological reports on a comparable product

Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
EC50 3.110 mg/l Species: activated sludge Exposure duration: 3 h Method: ISO test method 8192-1986 E

12.2 Persistence and degradability

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
Biodegradability
Biodegradation: 13 %, 28 d, i.e. not readily degradable Method: OECD Test Guideline 301 F Ecotoxicological reports on a comparable product

Biodegradation: 0 %, 28 d, i.e. not inherently degradable Method: OECD Test Guideline 302 C Ecotoxicological studies of the product

Stability in water
Half life: 655 h at 25 °C (pH: 4) Method: OECD Test Guideline 111 Studies of a comparable product.

Half life: 25,4 h at 25 °C (pH: 7) Method: OECD Test Guideline 111 Studies of a comparable product.

Half life: 16,8 h at 25 °C (pH: 9) Method: OECD Test Guideline 111 Studies of a comparable product.

Volatility (Henry's Law constant)
Calculated value = 0,01 Pa*m3/mol The substance has to be scored as non-volatile from water.

Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
Biodegradability
Biodegradation: 13 %, 28 d, i.e. not readily degradable Method: OECD Test Guideline 301 F

Biodegradation: 6 %, 28 d, i.e. not inherently degradable Method: OECD Test Guideline 302 C

Stability in water
Test type: Hydrolysis Half life: 655 h at 25 °C (pH: 4) Method: OECD Test Guideline 111

Test type: Hydrolysis Half life: 25,4 h at 25 °C (pH: 7) Method: OECD Test Guideline 111

Test type: Hydrolysis Half life: 16,8 h at 25 °C (pH: 9) Method: OECD Test Guideline 111

Volatility (Henry's Law constant)
Calculated value = 0,24 Pa*m3/mol The substance has to be scored as being slightly volatile from water.

Xylene, mixture of isomers
Biodegradability

Test Type: aerobic Result: Readily biodegradable Method: OECD Test Guideline 301F GLP: yes

n-butyl acetate
Biodegradability
Result: Readily biodegradable Method: OECD Test Guideline 301D

2-methoxy-1-methylethyl acetate
Biodegradability
Result: Readily biodegradable Method: OECD Test Guideline 301F GLP: yes

12.3 Bioaccumulative potential

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
Bioconcentration factor (BCF): 1.872 Species: value calculated The substance hydrolyzes rapidly in water. An accumulation in aquatic organisms is not to be expected.

Partition coefficient (n−octanol/water) log Pow: ca. 5,16 at: 20 °C(value calculated)

Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
Bioconcentration factor (BCF): value calculated 8.228 The substance hydrolyzes rapidly in water. An accumulation in aquatic organisms is not to be expected.

n-butyl acetate
Partition coefficient: noctanol/ water : log Pow: 2,3 (25 °C) pH: 7 Method: OECD Test Guideline 117 GLP: yes

2-methoxy-1-methylethyl acetate
Partition coefficient: noctanol/ water : log Pow: 1,2 (20 °C) pH: 6,8 Method: OECD Test Guideline 117 GLP: yes

12.4 Mobility in soil

Aspartic Acid, N,N'-(methylenedi-4,1-cyclohexanediyl)bis-, 1,1',4,4'-tetraethyl ester
Distribution among environmental compartments
Adsorption/Soil log Koc value: 4,2 - 5,1 Method: EU Method C.19 Studies of a comparable product.

Surface tension
ca. 63,9 mN/m at 20 °C Method: OECD Test Guideline 115

Aspartic Acid, N,N'-[methylenebis(2-methyl-4,1-cyclohexanediyl)]bis-, 1,1',4,4'-tetraethyl ester
Distribution among environmental compartments
Adsorption/Soil log Koc value: 4,2 - 5,1 Method: EU Method C.19

12.5 Results of PBT and vPvB assessment

No data available

12.6 Additional Information

No additional information

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Material Recommendation:
Material that cannot be used, reprocessed or recycled should be disposed of in accordance with Federal, State, and local regulations at an approved facility. Depending on the regulations, waste treatment methods may include, e.g., landfill or incineration.

Uncleaned packaging Recommendation:
After final product withdrawal, all residues must be removed from containers (drip-free, powder-free or paste-free). Once the product residues adhering to the walls of the containers have been rendered harmless, the product and hazard labels must be invalidated. These containers can be returned for recycling to the appropriate centres set up within the framework of the existing take-back scheme of the chemical industry. Containers must be recycled in compliance with national legislation and environmental regulations.

None disposal into waste water.

SECTION 14 – TRANSPORT INFORMATION

Transport Information	Classified as a **Non-Dangerous** Good according to the Australian Code for the Transportation of Dangerous Goods by Road and Rail.
U.N. Number:	Not applicable
DG Class:	Non-Dangerous
EPG card:	Not applicable
Hazchem Code:	Not applicable
Proper Shipping Name:	Not applicable
Packing Group:	Not applicable
Poison Schedule	Not applicable
Label	Not applicable

SECTION 15 – REGULATORY INFORMATION

15.1	**Safety, health and environmental regulations/legislation specific for the substance or mixture**	National and local regulations must be observed. For information on labeling please refer to section 2 of this document. **Poisons Schedule Number: Not classified a schedule poison**
	Australian Inventory:	Listed
	Controlled Schedule	No listed substances
	Carcinogenic Substances:	

SECTION 16 – OTHER INFORMATION

Safety Data Sheets are updated regularly. Please ensure you have a current copy. SDS can be obtained from our website: www.envirosystems.com.au
The SDS should be used to assist in the Risk Management. Many other factors determine whether the reported Hazards are risks in any given workplace.
Specific Risks may be determined by reference to various Exposure Scenarios, Scale of use, Frequency of use and current or available engineering controls must be considered.

Emergency Telephone: Info Safe – 1800 638 556, Poisons Centre – 13112