SAFETY DATA SHEET

Australian statement of hazardous nature : Classified as hazardous according to criteria of Safe Work Australia

Section 1 - Identification

Product Name **Ethylbenzene**

Synonyms Resin solution

Product Code	**BUE20-3046, BUE20-8190**
Address	ThermoFisher Scientific Australia Pty Ltd 5 Caribbean Drive, Scoresby VICTORIA 3179, Australia
Emergency Tel.	**CHEMTREC®** **03 9757 4559 or +613 9757 4559**
Telephone / Fax Numbers	Tel: 1300 735 292 Fax: 1800 067 639
E-mail address	ANZinfo@thermofisher.com

Recommended Use Laboratory chemicals.

Uses advised against This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling and storing these substances. This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction. This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern.

Section 2 - Hazard(s) Identification

Classification under Safe Work Australia

Classified as hazardous according to criteria of Safe Work Australia

Physical hazards

Flammable liquids	Category 3

Health hazards

Aspiration Toxicity	Category 1
Acute Dermal Toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Skin Corrosion/Irritation	Category 2
Reproductive Toxicity	Category 2
Specific target organ toxicity - (single exposure)	Category 3
Specific target organ toxicity - (repeated exposure)	Category 2

Environmental hazards

No hazards identified

Label Elements


Flame


Exclamation Mark


Health Hazard

Signal Word **Danger**

Hazard Statements
H226 - Flammable liquid and vapor
H315 - Causes skin irritation
H304 - May be fatal if swallowed and enters airways
H336 - May cause drowsiness or dizziness
H361 - Suspected of damaging fertility or the unborn child
H373 - May cause damage to organs through prolonged or repeated exposure
H312 + H332 - Harmful in contact with skin or if inhaled

Precautionary Statements
P201 - Obtain special instructions before use
P202 - Do not handle until all safety precautions have been read and understood
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking
P233 - Keep container tightly closed
P240 - Ground and bond container and receiving equipment
P242 - Use non-sparking tools
P243 - Take action to prevent static discharges
P260 - Do not breathe dust/fume/gas/mist/vapors/spray
P264 - Wash face, hands and any exposed skin thoroughly after handling
P271 - Use only outdoors or in a well-ventilated area
P280 - Wear eye protection/ face protection
P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P331 - Do NOT induce vomiting
P332 + P313 - If skin irritation occurs: Get medical advice/attention
P363 - Wash contaminated clothing before reuse
P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish
P403 + P233 - Store in a well-ventilated place. Keep container tightly closed
P501 - Dispose of contents/ container to an approved waste disposal plant

Other information

Toxic to terrestrial vertebrates
This product does not contain any known or suspected endocrine disruptors

Section 3 - Composition and Information on Ingredients

Component	CAS No	Weight %
Toluene	108-88-3	30-60
1,1,1,2-Tetrafluoroethane	811-97-2	10-30
Xylenes (o-, m-, p- isomers)	1330-20-7	5-10
Ethylbenzene	100-41-4	1-5

Section 4 - First Aid Measures

Inhalation	Remove to fresh air. Get medical attention immediately if symptoms occur. If not breathing, give artificial respiration. Risk of serious damage to the lungs (by aspiration).
Ingestion	Do NOT induce vomiting. Call a physician or poison control center immediately. If vomiting occurs naturally, have victim lean forward.
Skin Contact	Wash off immediately with plenty of water for at least 15 minutes. Get medical attention immediately if symptoms occur.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.
Self-Protection of the First Aider	Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.
First Aid Facilities	Eyewash, safety shower and washroom.
Most important symptoms and effects	Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
Notes to Physician	Treat symptomatically.

Section 5 - Fire Fighting Measures

Suitable Extinguishing Media
CO_2, dry chemical, dry sand, alcohol-resistant foam. Cool containers with flooding quantities of water until well after fire is out. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons
No information available.

Hazardous Decomposition Products
Carbon monoxide (CO), Carbon dioxide (CO_2).

Specific Hazards Arising from the Chemical
Flammable. Thermal decomposition can lead to release of irritating gases and vapors. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Vapors may form explosive mixtures with air.

Special protective equipment and precautions for fire fighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

Section 6 - Accidental Release Measures

Emergency procedures
Use personal protective equipment as required. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions
Do not flush into surface water or sanitary sewer system.

Methods for Containment and Clean Up

Clean-up methods - small spillage
Remove all sources of ignition. Soak up with inert absorbent material. Use spark-proof tools and explosion-proof equipment. Keep in suitable, closed containers for disposal. Take precautionary measures against static discharges.

Clean-up methods - large spillage
Typically only supplied is small quantiites as packaged goods.
If extremely toxic or used in larger quantities ensure a spillage action plan is in place. Evacuate area. Control the source and/or contain the spill if safe and able to do so. Use temporary diking, sand bags, dry sand, earth or proprietary booms/absorbent pads if available. Obtain advice on containment, neutralisation and clean-up from local emergency responders.

Reference to Other Sections
Refer to protective measures listed in Sections 8 and 13.

Section 7 - Handling and Storage

Precautions for Safe Handling
Wear personal protective equipment/face protection. Avoid contact with skin, eyes or clothing. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges. To avoid ignition of vapors by static electricity discharge, all metal parts of the equipment must be grounded.

Conditions for Safe Storage, Including any Incompatibilities
Keep containers tightly closed in a dry, cool and well-ventilated place. Flammables area. Keep away from heat, sparks and flame. Do not freeze.

AS/NZS 2243.10:2004, Safety in laboratories - Storage of chemicals
AS 1940-2004 - The storage and handling of flammable and combustible liquids

Section 8 - Exposure Controls and Personal Protection

Exposure limits
AUS - Exposure Standards for Atmospheric Contaminants in the Occupational Environment - Guidance Note on the Interpretation of Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:3008(1995)]
Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995)] updated in August, 2005. Safe Work Australia
ACGIH - Threshold Limit Values - Ceiling (TLV-C) guidelines by the American Conference of Governmental Industrial Hygienists (ACGIH) for controlling worker exposure to airborne chemical concentrations in the workplace.
UK - EH40/2005 Work Exposure Limits, Fourth edition. Published 2020.
DE - MAK and BAT values of Hazardous Chemical Compounds in the Work Area. Published by German Research Foundation on July 1, 2011
NZ - Workplace Exposure Standards and Biological Exposure Indices (6th edition). New Zealand Department of Labor

Component	Australia	New Zealand WEL	ACGIH TLV	The United Kingdom	Germany
Toluene	STEL: 150 ppm STEL: 574 mg/m³ TWA: 50 ppm TWA: 191 mg/m³	TWA: 20 ppm TWA: 75 mg/m³ STEL: 100 ppm STEL: 377 mg/m³ Skin	TWA: 20 ppm	STEL: 100 ppm 15 min STEL: 384 mg/m³ 15 min TWA: 50 ppm 8 hr TWA: 191 mg/m³ 8 hr Skin	TWA: 50 ppm (8 Stunden). AGW - exposure factor 2 TWA: 190 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 50 ppm (8 Stunden). MAK TWA: 190 mg/m³ (8 Stunden). MAK Höhepunkt: 100 ppm Höhepunkt: 380 mg/m³ Haut
1,1,1,2-Tetrafluoroethane	TWA: 1000 ppm TWA: 4240 mg/m³	TWA: 1000 ppm TWA: 4200 mg/m³		STEL: 3000 ppm 15 min STEL: 12720 mg/m³ 15 min TWA: 1000 ppm 8 hr TWA: 4240 mg/m³ 8 hr	TWA: 1000 ppm (8 Stunden). AGW - exposure factor 8 TWA: 4200 mg/m³ (8 Stunden). AGW - exposure factor 8 TWA: 1000 ppm (8 Stunden). MAK TWA: 4200 mg/m³ (8

					Stunden). MAK Höhepunkt: 8000 ppm Höhepunkt: 33600 mg/m³
Xylenes (o-, m-, p-isomers)	STEL: 150 ppm STEL: 655 mg/m³ TWA: 80 ppm TWA: 350 mg/m³	TWA: 50 ppm TWA: 217 mg/m³	TWA: 20 ppm	STEL: 100 ppm 15 min STEL: 441 mg/m³ 15 min TWA: 50 ppm 8 hr TWA: 220 mg/m³ 8 hr Skin	TWA: 50 ppm (8 Stunden). AGW - exposure factor 2 TWA: 220 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 50 ppm (8 Stunden). MAK all isomers TWA: 220 mg/m³ (8 Stunden). MAK all isomers Höhepunkt: 100 ppm Höhepunkt: 440 mg/m³ Haut Haut all isomers
Ethylbenzene	STEL: 125 ppm STEL: 543 mg/m³ TWA: 100 ppm TWA: 434 mg/m³	TWA: 20 ppm TWA: 88 mg/m³ STEL: 40 ppm STEL: 176 mg/m³ Skin	TWA: 20 ppm	STEL: 125 ppm 15 min STEL: 552 mg/m³ 15 min TWA: 100 ppm 8 hr TWA: 441 mg/m³ 8 hr Skin	TWA: 20 ppm (8 Stunden). AGW - exposure factor 2 TWA: 88 mg/m³ (8 Stunden). AGW - exposure factor 2 TWA: 20 ppm (8 Stunden). MAK TWA: 88 mg/m³ (8 Stunden). MAK Höhepunkt: 40 ppm Höhepunkt: 176 mg/m³ Haut

Biological limit values

UK - Biological Monitoring Guidance Values provided by the UK's Health and Safety Executive (HSE) Control of Substances Hazardous to Health Regulations (COSHH) 2002 (as amended) and EH40/2005.

Component	Australia	New Zealand	European Union	United Kingdom	Germany
Toluene		0.03 mg/L (urine) end of exposure or end of shift (Toluene) 0.3 mg/g creatinine (urine) end of exposure or end of shift (O-Cresol)			Toluene: 600 µg/L whole blood (immediately after exposure) Toluene: 75 µg/L urine (end of shift) o-Cresol (after hydrolysis): 1.5 mg/L urine (for long-term exposures: at the end of the shift after several shifts) o-Cresol (after hydrolysis): 1.5 mg/L urine (end of shift)
Xylenes (o-, m-, p-isomers)		1.5 g/L (urine) end of shift (Methylhippuric acid)		Methyl hippuric acid: 650 mmol/mol creatinine urine post shift	Methylhippuric(tolur-)acid (all isomers): 2000 mg/L urine (end of shift all isomers)
Ethylbenzene		0.25 g/g creatinine (urine) end of shift or end of work week (sum of Mandelic acid and Phenylglyoxylic acids)			Mandelic acid plus Phenylglyoxylic acid: 250 mg/g Creatinine urine (end of shift)

Exposure Controls

Engineering Measures

Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting equipment.

Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or

equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source

Personal protective equipment

Eye Protection Wear safety glasses with side shields (or goggles) (Australian/New Zealand Standard AS/NZS 1337 - Eye protectors for Industrial applications)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	AUS/NZ Standard	Glove comments
Nitrile rubber	See manufacturers recommendations	-	AS/NZS 2161	(minimum requirement)

Inspect gloves before use.
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)
Ensure gloves are suitable for the task: Chemical compatability, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.
Remove gloves with care avoiding skin contamination.

Skin and body protection Wear appropriate protective gloves and clothing to prevent skin exposure

Repiratory Protection Use an AS/NZS 1716 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained in line with AS/NZS 1715 on the use and maintenance of repiratory protective devices

Recommended Filter type: Particulates filter conforming to EN 143 (or AUS/NZ equivalent)
Recommended half mask:- Particle filtering: EN149:2001 (or AUS/NZ equivalent)
When RPE is used a face piece Fit Test should be conducted

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

Environmental exposure controls Prevent product from entering drains. Do not allow material to contaminate ground water system.

Section 9 - Physical and Chemical Properties

Information on basic physical and chemical properties

Appearance	Clear	
Physical State	Liquid	
Odor	Solvent-like	
Odor Threshold	No data available	
pH	Not applicable	
Melting Point/Range	No data available	
Softening Point	No data available	
Boiling Point/Range	232 - 281 °C / 449.6 - 537.8 °F	
Flash Point	Not applicable °C / °F	**Method -** No information available
Evaporation Rate	No data available	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	**Lower** 0.6%	
	Upper 8.0%	
Vapor Pressure	No data available	
Vapor Density	No data available	(Air = 1.0)
Specific Gravity / Density	0.958	
Bulk Density	Not applicable	Liquid
Water Solubility	Insoluble	
Solubility in other solvents	No information available	

Partition Coefficient (n-octanol/water)

Component	**log Pow**
Toluene	2.73

1,1,1,2-Tetrafluoroethane	1.06	
Xylenes (o-, m-, p- isomers)	3.15	
Ethylbenzene	3.6	
Autoignition Temperature	No data available	
Decomposition Temperature	No data available	
Viscosity	2700-4700 mPas	
Explosive Properties		explosive air/vapour mixtures possible Vapors may form explosive mixtures with air
Oxidizing Properties	No information available	

Other information

Section 10 - Stability and Reactivity

Reactivity None known, based on information available

Stability Stable under normal conditions.

Conditions to Avoid Incompatible products, Excess heat, Keep away from open flames, hot surfaces and sources of ignition, Do not freeze.

Incompatible Materials Strong oxidizing agents.

Hazardous Decomposition Products Carbon monoxide (CO). Carbon dioxide (CO_2).

Hazardous Polymerization Hazardous polymerization does not occur.

Section 11 - Toxicological Information

Information on Toxicological Effects

Product Information

(a) acute toxicity;

Oral Based on available data, the classification criteria are not met

Dermal Category 4

Inhalation Category 4

Toxicology data for the components

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Toluene	> 5000 mg/kg (Rat)	LD50 = 12000 mg/kg (Rabbit)	26700 ppm (Rat) 1 h
1,1,1,2-Tetrafluoroethane			LC50 = 1500 g/m³ (Rat) 4 h
Xylenes (o-, m-, p- isomers)	LD50 = 3500 mg/kg (Rat)	LD50 > 4350 mg/kg (Rabbit)	29.08 mg/L [MOE Risk Assessment Vol.1, 2002]
Ethylbenzene	3500 mg/kg (Rat)	15400 mg/kg (Rabbit)	17.2 mg/L (Rat) 4 h

(b) skin corrosion/irritation; Category 2

(c) serious eye damage/irritation; No data available

(d) respiratory or skin sensitization;

Respiratory No data available

Skin No data available

(e) germ cell mutagenicity; No data available

(f) carcinogenicity; No data available

The table below indicates whether each agency has listed any ingredient as a carcinogen

Component	Australia	New Zealand	New South Wales	Western Australia	IARC	EU	UK	Germany
Ethylbenzene					Group 2B			

(g) reproductive toxicity; Category 2

(h) STOT-single exposure; Category 3

Results / Target organs Central nervous system (CNS)

(i) STOT-repeated exposure; Category 2

Target Organs None known, Neuropsychological effects, Eyes, Ears.

(j) aspiration hazard; Category 1

Symptoms / effects,both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Section 12 - Ecological Information

Ecotoxicity effects The product contains following substances which are hazardous for the environment. Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
Toluene	50-70 mg/L LC50 96 h 5-7 mg/L LC50 96 h 15-19 mg/L LC50 96 h 28 mg/L LC50 96 h 12 mg/L LC50 96 h	EC50: = 11.5 mg/L, 48h (Daphnia magna) EC50: 5.46 - 9.83 mg/L, 48h Static (Daphnia magna)	EC50: = 12.5 mg/L, 72h static (Pseudokirchneriella subcapitata) EC50: > 433 mg/L, 96h (Pseudokirchneriella subcapitata)	EC50 = 19.7 mg/L 30 min
1,1,1,2-Tetrafluoroethane	LC50: = 450 mg/L, 96h semi-static (Oncorhynchus mykiss)			
Xylenes (o-, m-, p- isomers)	LC50: 30.26 - 40.75 mg/L, 96h static (Poecilia reticulata) LC50: = 780 mg/L, 96h semi-static (Cyprinus carpio) LC50: 23.53 - 29.97 mg/L, 96h static (Pimephales promelas) LC50: > 780 mg/L, 96h (Cyprinus carpio) LC50: 7.711 - 9.591 mg/L, 96h static (Lepomis macrochirus) LC50: = 19 mg/L, 96h (Lepomis macrochirus) LC50: 13.1 - 16.5 mg/L, 96h flow-through (Lepomis macrochirus) LC50: 13.5 - 17.3 mg/L, 96h (Oncorhynchus mykiss) LC50: 2.661 - 4.093 mg/L, 96h static	LC50: = 0.6 mg/L, 48h (Gammarus lacustris) EC50: = 3.82 mg/L, 48h (water flea)		EC50 = 0.0084 mg/L 24 h

	(Oncorhynchus mykiss) LC50: = 13.4 mg/L, 96h flow-through (Pimephales promelas)			
Ethylbenzene	LC50: 9.1 - 15.6 mg/L, 96h static (Pimephales promelas) LC50: 11.0 - 18.0 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 4.2 mg/L, 96h semi-static (Oncorhynchus mykiss) LC50: 7.55 - 11 mg/L, 96h flow-through (Pimephales promelas) LC50: = 32 mg/L, 96h static (Lepomis macrochirus) LC50: = 9.6 mg/L, 96h static (Poecilia reticulata)	EC50: 1.8 - 2.4 mg/L, 48h (Daphnia magna)	EC50: 2.6 - 11.3 mg/L, 72h static (Pseudokirchneriella subcapitata) EC50: 1.7 - 7.6 mg/L, 96h static (Pseudokirchneriella subcapitata) EC50: > 438 mg/L, 96h (Pseudokirchneriella subcapitata) EC50: = 4.6 mg/L, 72h (Pseudokirchneriella subcapitata)	EC50 = 9.68 mg/L 30 min EC50 = 96 mg/L 24 h

Persistence and Degradability

Persistence based on information available, May persist.

Component	Degradability
Toluene 108-88-3 (30-60)	86% (20d)

Degradation in sewage treatment plant Contains substances known to be hazardous to the environment or not degradable in waste water treatment plants.

Bioaccumulative Potential May have some potential to bioaccumulate

Component	log Pow	Bioconcentration factor (BCF)
Toluene	2.73	90
1,1,1,2-Tetrafluoroethane	1.06	No data available
Xylenes (o-, m-, p- isomers)	3.15	0.6 - 15 dimensionless
Ethylbenzene	3.6	15 dimensionless

Mobility Spillage unlikely to penetrate soil. The product is insoluble and floats on water. The product contains volatile organic compounds (VOC) which will evaporate easily from all surfaces. The product evaporates slowly. Is not likely mobile in the environment due its low water solubility: Will likely be mobile in the environment due to its volatility Spillage unlikely to penetrate soil

Endocrine Disruptor Information This product does not contain any known or suspected endocrine disruptors

Persistent Organic Pollutant This product does not contain any known or suspected substance

Ozone Depletion Potential This product does not contain any known or suspected substance

Section 13 - Disposal Considerations

Waste from Residues/Unused Products Do not allow into drains or watercourses or dispose of where ground or surface waters may be affected. Wastes, including emptied containers, are controlled wastes and should be disposed of in accordance with all federal, E.P.A., state and local regulations. Assure conformity with all applicable regulations.

Contaminated Packaging Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

Other Information Chemical wastes should be disposed through a licensed commercial waste collection service. Do not flush to sewer. Waste codes should be assigned by the user based on the application for which the product was used. Can be landfilled or incinerated, when in compliance with local regulations. Do not let this chemical enter the environment. Do not empty into drains.

Section 14 - Transport Information

IMDG/IMO

UN-No UN1950
Proper Shipping Name AEROSOLS
Technical Shipping Name Buehler METCOAT protective spray
Hazard Class 2

ADG

UN-No UN1950
Proper Shipping Name AEROSOLS
Technical Shipping Name Buehler METCOAT protective spray
Hazard Class 2

Component	Hazchem Code
Toluene 108-88-3 (30-60)	3YE
1,1,1,2-Tetrafluoroethane 811-97-2 (10-30)	2TE
Xylenes (o-, m-, p- isomers) 1330-20-7 (5-10)	3Y 3YE
Ethylbenzene 100-41-4 (1-5)	3YE

IATA

UN-No UN1950
Proper Shipping Name AEROSOLS, FLAMMABLE
Technical Shipping Name Buehler METCOAT protective spray
Hazard Class 2.1

Environmental hazards Dangerous for the environment
Product is a marine pollutant according to the criteria set by IMDG/IMO

Special Precautions No special precautions required

Additional information None known

Section 15 - Regulatory Information

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

National Regulations **Australia**

See section 8 for national exposure control parameters.

Standard for the Uniform Scheduling of Medicines and Poisons
Classified as a scheduled poison according to the Standard for Uniform Scheduling of Medicines and Poisons.

Component	Standard for the Uniform Scheduling of Medicines and Poisons
Toluene - 108-88-3	Schedule 5 listed - including Kerosene, Diesel [distillate], Mineral turpentine, White petroleum spirit, Toluene, Xylene and light mineral and paraffin oils but except their derivative;except a) Toluene and Xylene when included in Schedule 6, b) Benzene and liquid aromatic hydrocarbons when included in Schedule 7, c) food grade and pharmaceutical grade White mineral oil, d) in solid or semi-solid preparations, e) in preparations containing <=25% of designated solvents, f) in preparations packed in pressurized spray packs, g) in adhesives packed in containers each containing <=50 grams of

	adhesive, h) in writing correction fluids and thinners for writing correction fluids packed in containers having a capacity of <=20 mL, or i) in other preparations when packed in containers with a capacity of <=2 mL Schedule 6 listed - except its derivatives;except in preparations containing <=50% of Toluene or Toluene and Xylene
Xylenes (o-, m-, p- isomers) - 1330-20-7	Schedule 5 listed - including Kerosene, Diesel [distillate], Mineral turpentine, White petroleum spirit, Toluene, Xylene and light mineral and paraffin oils but except their derivative;except a) Toluene and Xylene when included in Schedule 6, b) Benzene and liquid aromatic hydrocarbons when included in Schedule 7, c) food grade and pharmaceutical grade White mineral oil, d) in solid or semi-solid preparations, e) in preparations containing <=25% of designated solvents, f) in preparations packed in pressurized spray packs, g) in adhesives packed in containers each containing <=50 grams of adhesive, h) in writing correction fluids and thinners for writing correction fluids packed in containers having a capacity of <=20 mL, or i) in other preparations when packed in containers with a capacity of <=2 mL Schedule 6 listed - except its derivatives;except in preparations containing <=50% of Xylene or Xylene and Toluene

Australian Industrial Chemicals Introduction Scheme (AICIS)

Component	Australian Industrial Chemicals Introduction Scheme (AICIS)	Additional information
Toluene - 108-88-3	Present	-
1,1,1,2-Tetrafluoroethane - 811-97-2	Present	-
Xylenes (o-, m-, p- isomers) - 1330-20-7	Present	-
Ethylbenzene - 100-41-4	Present	-

Australian - Illicit Drug Precursors/Reagents Substance List
This product contains one or more substance(s) on the Illicit Drug Precursors/Reagents list. Verify requirements related to using, handling and storing these substances.

Chemicals of Security Concern
This product does not contain any substance(s) listed on the voluntary National Code of Practice for Chemicals of Security Concern

Component	Australian - Illicit Drug Precursors/Reagents Substance List	Chemicals of Security Concern
Toluene - 108-88-3	Category 3	

Legend
Category 3 - Chemicals and apparatus that may be used in the illicit production of drugs. Purchases from this list should alert companies or organizations to seek further indicators of any suspicious orders or enquiries. No official reporting is required for items on this list unless considered warranted

National pollutant inventory Subject to reporting requirements

Component	National pollutant inventory
Toluene - 108-88-3	10 tonne/yr. Threshold category 1
Xylenes (o-, m-, p- isomers) - 1330-20-7	10 tonne/yr. Threshold category 1 including individual or mixed isomers
Ethylbenzene - 100-41-4	10 tonne/yr. Threshold category 1

Prohibition or notification/licensing requirements
Shown below are details of specific prohibition/notifications or licencing requirements when they apply.

This product does not contain any substance(s) subject to Prohibition, Authorization or Restriction.

International Inventories

Component	AICS	NZIoC	EINECS	ELINCS	TSCA	DSL	NDSL	PICCS	ENCS	ISHL	IECSC	KECL
Toluene	X	X	203-625-9	-	X	X	-	X	X	X	X	KE-33936
1,1,1,2-Tetrafluoroethane	X	X	212-377-0	-	X	X	-	X	X	X	X	KE-33426

Xylenes (o-, m-, p- isomers)	X	X	215-535-7	-	X	X	-	X	X	X	X	KE-35427
Ethylbenzene	X	X	202-849-4	-	X	X	-	X	X	X	X	KE-13532

Legend: X - Listed. '-' - Not Listed. **KECL** - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

International Regulations

Ozone Depletion Potential This product does not contain any known or suspected substance

Component	Ozone Depletion Potential	Australian Ozone Depleting substance listings	New Zealand Ozone Depleting Substances listing
1,1,1,2-Tetrafluoroethane - 811-97-2		: (Part IX Substance)	GWP : 1430

Persistent Organic Pollutant This product does not contain any known or suspected substance

Rotterdam Convention (PIC) Not applicable

Basel convention on the control of transboundary movements of hazardous wastes and their dispoal
Take note that wastes may be subject to export, import, or transit controls pursuant to the Basel convention and/or local regulations implementing the Basel convention.

Component	Basel Convention (Hazardous Waste)	Australian Hazardous Waste Act - Categories of Wastes to Be Controlled
Toluene - 108-88-3	Annex I - Y42	Y42 except Halogenated solvents
1,1,1,2-Tetrafluoroethane - 811-97-2	Annex I - Y45	Y45 except substances referenced in Annex I
Xylenes (o-, m-, p- isomers) - 1330-20-7	Annex I - Y42	Y42 except Halogenated solvents

Component	CAS No	OECD HPV	Restriction of Hazardous Substances (RoHS)	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements
Toluene	108-88-3	Listed	Not applicable	Not applicable	Not applicable
1,1,1,2-Tetrafluoroethane	811-97-2	Listed	Not applicable	Not applicable	Not applicable
Xylenes (o-, m-, p- isomers)	1330-20-7	Listed	Not applicable	Not applicable	Not applicable
Ethylbenzene	100-41-4	Listed	Not applicable	Not applicable	Not applicable

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	REACH Regulation (EC 1907/2006) article 59 - Candidate List of Substances of Very High Concern (SVHC)
Toluene	-	Use restricted. See item 48. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	-
Xylenes (o-, m-, p- isomers)	-	Use restricted. See item 75. (see link for restriction details)	-

https://echa.europa.eu/substances-restricted-under-reach

Section 16 - Other Information

Legend

AICS - Australian Inventory of Chemical Substances
TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List
IECSC - Chinese Inventory of Existing Chemical Substances
PICCS - Philippines Inventory of Chemicals and Chemical Substances
TWA - Time Weighted Average
IARC - International Agency for Research on Cancer
ICAO/IATA - International Civil Aviation Organization/International Air Transport Association
MARPOL - International Convention for the Prevention of Pollution from Ships
NZS 5433:2020 - Transport of Dangerous Goods on Land
LD50 - Lethal Dose 50%
EC50 - Effective Concentration 50%
WEL - Workplace Exposure Limit
DNEL - Derived No Effect Level
POW - Partition coefficient Octanol:Water
vPvB - very Persistent, very Bioaccumulative
VOC - (Volatile Organic Compound)

NZIoC - New Zealand Inventory of Chemicals
EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances
ENCS - Japanese Existing and New Chemical Substances
KECL - Korean Existing and Evaluated Chemical Substances
CAS - Chemical Abstracts Service
ACGIH - American Conference of Governmental Industrial Hygienists Predicted No Effect Concentration (PNEC)
IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

OECD - Organisation for Economic Co-operation and Development
LC50 - Lethal Concentration 50%
ATE - Acute Toxicity Estimate
RPE - Respiratory Protective Equipment
NOEC - No Observed Effect Concentration
BCF - Bioconcentration factor
PBT - Persistent, Bioaccumulative, Toxic

Key literature references and sources for data
https://echa.europa.eu/information-on-chemicals
Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Physical hazards	On basis of test data
Health Hazards	Calculation method
Environmental hazards	Calculation method

Training Advice
Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.
Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.
First aid for chemical exposure, including the use of eye wash and safety showers.

Revision Date	14-Jul-2023
Revision Summary	Update to GHS format.

This Safety Data Sheet (SDS) is prepared in accordance to and complies with the requirements of Safe Work Australia - Work Health and Safety Regulations (WHS Regulations).

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet