Safety Data Sheet

Issue Date :January 2016

Product Name : **ETHYL ACETATE**

Classified as hazardous

1. Identification

GHS Product Identifier ETHYL ACETATE

Company Name BERMUDA INDUSTRIAL SUPPLIES (71 149 716 003)

Address 16/1 Cowpasture Place
Wetherill Park
NSW 2164 Australia

Telephone Number 02 9604 4344

Emergency phone number 02 9604 4344

Recommended use of the chemical and restrictions on use General solvent in coatings and plastics, solvent for nitrocellulose, varnishes, lacquers and aeroplane dopes, organic synthesis, pharmaceuticals, synthetic fruit essences, smokeless powders, artificial leather and silk, photographic film and plate, perfumes, cleaning textiles, flavouring agent, analytical reagent and laboratory reagent.

Other Names

Product Code	Name
	ETHYL ACETATE AR
	Ethyl ethanoate, Acetic acid ethyl ester, Acetic ester
	ETHYL ACETATE TG

Other Information

Bermuda Industrial Supplies does not warrant that this product is suitable for any use or purpose. The user must ascertain the suitability of the product before use or application intended purpose. Preliminary testing of the product before use or application is recommended. Any reliance or purported reliance upon Bermuda Industrial Supplies with respect to any skill or judgement or advice in relation to the suitability of this product of any purpose is disclaimed. Except to the extent prohibited at law, any condition implied by any statute as to the merchantable quality of this product or fitness for any purpose is hereby excluded. This product is not sold by description. Where the provisions of Part V, Division 2 of the Trade Practices Act apply, the liability of Bermuda Industrial Supplies is limited to the replacement of supply of equivalent goods or payment of the cost of replacing the goods or acquiring equivalent goods.

2. Hazard Identification

GHS classification of the substance/mixture Eye Damage/Irritation: Category 2A
Flammable Liquids: Category 2
Specific target organ toxicity - Single Exposure Category 3 (Central nervous system)

Signal Word (s) DANGER

Hazard Statement (s) H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.
AUH066 Repeated exposure may cause skin dryness or cracking

Pictogram (s) Flame, Exclamation mark

Precautionary statement – Prevention
P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ventilating/lighting/.../equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P261 Avoid breathing dust/fume/gas/mist/vapours/spray.
P264 Wash thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear protective gloves/protective clothing/eye protection/face protection.

Precautionary statement – Response
Skin
P303+P361+P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
Inhaled

Precautionary statement – Storage	P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P312 Call a POISON CENTER or doctor/physician if you feel unwell. Eyes P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+P313 If eye irritation persists: Get medical advice/attention. Fire P370+P378 In case of fire: Use foam, dry chemical, CO2 or water spray for extinction. P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.

3. Composition/information on ingredients

Chemical Characterization	Liquid
Information on Composition	Obtained by the slow heating of acetic acid and ethyl alcohol in the presence of sulfuric acid and distilling.

Ingredients

Name	CAS	Proportion	Hazard Symbol	Risk Phrase
Ethyl acetate	141-78-6	98-100 %		

4. First-aid measures

Inhalation	If inhaled, remove from contaminated area to fresh air immediately, avoid becoming a casualty. Make patient comfortable, keep warm and at rest until fully recovered. If breathing is difficult (or develops a bluish skin discolouration), supply oxygen by a qualified person. Apply artificial respiration with a respiratory medical device if not breathing. Do not use mouth to mouth resuscitation. If rapid recovery does not occur, obtain medical attention.
Ingestion	Aspiration of this product during induced vomiting may lead to lung injury. Rinse mouth thoroughly with water immediately, repeat until all traces of product have been removed. Give water to drink. DO NOT INDUCE VOMITING. Seek immediate medical advice.
Skin	Wash affected areas with copious quantities of water immediately. Remove contaminated clothing and wash before re-use. If persistent irritation occurs, obtain medical attention.
Eye contact	Immediately irrigate with copious quantity of water for at least 15 minutes. Eyelids to be held open. Seek medical advice.
First Aid Facilities	Maintain eyewash fountain and safety shower in work area.
Advice to Doctor	Treat symptomatically based on judgement of doctor and individual reactions of the patient.
Other Information	For advice, contact a Poisons Information Centre (Phone eg Australia 13 1126; New Zealand 0800 764 766) or a doctor.

5. Fire-fighting measures

Hazards from Combustion Products	Carbon monoxide and carbon dioxide.
Specific Methods	Caution: Use of water spray when fighting fire may be inefficient. Small fire: Use foam, dry chemical, CO2 or water spray. Large fire: Use foam, fog or water spray - Do not use water jets. Use alcohol resistant foam is preferred fire fighting medium, but if not abailable, normal foam can be used. If safe to do so, move undamaged containers from fire area. Cool containers with flooding quantities of water until well after fire is out. Avoid getting water inside containers.
Specific hazards arising from the chemical	HIGHLY FLAMMABLE: Liquids has a low flashpoint (-4°C) - Will be easily ignited by heat, sparks or flame. Vapours will form explosive mixtures with air. Vapours may travel to source of ignition and flash back. Vapours are heavier than air and will collect in low or confined areas (drains, basements, tanks). Liquid is lighter than water. Containers may explode when heated. Fire will produce irritating, poisonous and/or corrosive gases. Vapours from runoff may create explosion hazard.
Hazchem Code	•3YE
Precautions in connection with Fire	Wear SCBA and fully-encapsulating, gas-tight suit when handling these substances. Structural firefighter's uniform is NOT effective for these materials.

6. Accidental release measures

Spills & Disposal	ELIMINATE all ignition sources (no smoking, flares, sparks or flame) within at least 50m - All equipment

	used when handling the product must be earthed. Do not touch or walk through spilled material. Stop leak if safe to do so - Prevent entry into waterways, drains or confined areas. Vapour-suppressing foam may be used to control vapours - Water spray may be used to knock down or divert vapour clouds. Absorb with earth, sand or other non-combustible material. Use clean, non-sparking tools to collect absorbed material and place it into loosely-covered metal or plastic containers for later disposal. SEEK EXPERT ADVICE ON HANDLING AND DISPOSAL.
Personal Precautions	Evacuate the area of all non-essential personnel. Remove ignition sources Avoid inhalation, contact with skin, eyes and clothing.
Personal Protection	Wear protective clothing specified for normal operations (see Section 8)
Clean-up Methods - Small Spillages	Absorb or contain liquid with sand, earth or spill control material. Shovel up using non sparking tools and place in a labelled, sealable container for subsequent safe disposal. Put leaking containers in a labelled drum or overdrum.
Clean-up Methods - Large Spillages	Seek expert advice on handling and disposal.

7. Handling and storage

Precautions for Safe Handling	Do not breathe vapour. Avoid contact with eyes, skin and clothing. Avoid prolonged or repeated exposure. Take precautionary measures against static discharges. Ensure all electrical equipment is flameproofed.
Conditions for safe storage, including any incompatabilities	Keep container tightly closed and dry, away from direct sunlight and other sources of heat or ignition. Store at room temperature (15 - 25 °C). Store small containers in suitable flammable liquid storage cabinets. Larger drums (200L) must be kept in purpose-built stores. Ground all drums and transfer vessels. Containers of this material may be hazardous when empty since they retain product residues (vapours, liquid); observe all warnings and precautions listed for the product.
Corrosiveness	Not corrosive to iron, steel, aluminum, copper and nickel and their alloys.
Storage Regulations	Refer Australian Standard AS 1940-2004 'The storage and handling of flammable and combustible liquids'. Refer Australian Standard AS/NZS 2243.10:2004 'Safety in laboratories - Storage of chemicals'.
Unsuitable Materials	Some forms of plastic, rubber, and coatings.

8. Exposure controls/personal protection

Occupational exposure limit values

Name	STEL		TWA		
	mg/m3	ppm	mg/m3	ppm	Footnote
Ethyl acetate	1440	400	720	200	

Other Exposure Information	A time weighted average (TWA) has been established for Ethyl acetate (Safe Work Australia) of 720 mg/m³, (200 ppm). The corresponding STEL level is 1440 mg/m³, (400 ppm). The STEL (Short Term Exposure Limit) is an exposure value that should not be exceeded for more than 15 minutes and should not be repeated for more than 4 times per day. There should be at least 60 minutes between successive exposures at the STEL. The exposure value at the TWA is the average airborne concentration of a particular substance when calculated over a normal 8 hour working day for a 5 day working week.
Appropriate engineering controls	In industrial situations maintain the concentrations values below the TWA. This may be achieved by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods.
Respiratory Protection	Where ventilation is not adequate, respiratory protection may be required. Avoid breathing vapours or mists. Select and use respirators in accordance with AS 1716 - Respiratory Protective Devices and be selected in accordance with AS 1715 - Selection, Use and Maintenance of Respiratory Protective Devices. When mists or vapours exceed the exposure standards then the use of the following is recommended: Approved respirator with organic vapour and dust/mist filters. Filter capacity and respirator type depends on exposure levels.
Eye Protection	The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.
Hand Protection	Hand protection should comply with AS 2161, Occupational protective gloves - Selection, use and maintenance. Recommendation: Butyl rubber gloves Change gloves every 2 to 4 hours. Nitrile rubber gloves Change gloves frequently (every 30 to 60 minutes). Avoid skin contact when removing gloves from hands, do not touch the gloves outer surface. Dispose of gloves as hazardous waste.
Personal Protective Equipment	Final choice of personal protective equipment will depend on individual circumstances and/or according to risk assessments undertaken.

Footwear	Safety boots in industrial situations is advisory, foot protection should comply with AS 2210, Occupational protective footwear - Guide to selection, care and use.
Body Protection	Flame retardant antistatic protective clothing. Clean clothing or protective clothing should be worn, preferably with an apron. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.
Hygiene Measures	Always wash hands before smoking, eating or using the toilet. Wash contaminated clothing and other protective equipment before storing or re-using.

9. Physical and chemical properties

Form	Liquid
Appearance	Colourless liquid.
Odour	Fruity fragrant odour.
Melting Point	-83 °C
Boiling Point	77 °C
Solubility in Water	Slightly soluble, 80 g/L @ 20 °C.
Solubility in Organic Solvents	Soluble in chloroform, alcohol, acetone and ether.
Specific Gravity	0.9018 @ 20 °C
pH	Pure anhydrous ethyl acetate is neutral; normally contains small amounts of acetic acid.
Vapour Pressure	97 hPa @ 20 °C
Vapour Density (Air=1)	3.04
Evaporation Rate	7.5 (Butyl alcohol = 1)
Odour Threshold	The geometric mean air odour threshold is 18 ppm for detection and 32 ppm for recognition.
Viscosity	0.44 mPas @ 20 °C
Volatile Component	100 %
Partition Coefficient: n-octanol/water	Log P(o/w): 0.73
Flash Point	-4 °C
Flammability	HIGHLY FLAMMABLE. Keep away from heat, sparks or naked flames. Use flameproof equipment and fittings to prevent flammability risk. Electrically link and ground metal containers for transfer of the product to prevent accumulation of static electricity. Ensure adequate ventilation to prevent an explosive vapour-air mixture. Vapours will travel considerable distances to sources of ignition.
Auto-Ignition Temperature	426 °C
Flammable Limits - Lower	2.2 vol%
Flammable Limits - Upper	11.5 vol%
Molecular Weight	88.11
Saturated Vapour Concentration	336 g/m^3 @ 20 °C
Other Information	REFRACTIVE INDEX: 1.3723 DIPOLE MOMENT: 1.78 Debye @ 20 °C DIELECTRIC CONSTANT: 6.0 @ 25 °C CONVERSION FACTORS: 1 ppm = 3.66 mg/m^3; 1 mg/m^3 = 0.27 ppm @ 25 °C.

10. Stability and reactivity

Chemical Stability	Stable under ordinary conditions of use and storage. Heat will contribute to instability. Slowly decomposed by moisture.
Conditions to Avoid	Heat, flame and other sources of ignition.
Incompatible Materials	Alkali metals, fluorine, hydrides, water with air and light. Contact with nitrates, strong oxidizers, strong alkalis, or strong acids may cause fire and explosions. Will attack some forms of plastic, rubber, and coatings.

Hazardous Decomposition Products	Ethanol, acetic acid, carbon dioxide and carbon monoxide.
Possibility of hazardous reactions	Violent reaction with chlorosulfonic acid: (LiAlH2+2 -chloromethylfuran): oleum. Potentially explosive reaction with lithium tetrahydroaluminate. Can react vigorously with oxidizers.
Hazardous Polymerization	Will not occur.

11. Toxicological Information

Toxicology Information	No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. If mishandled or overexposed to this product the following symptonm or effects may occur.
Acute Toxicity - Oral	LD50 (rat): 5620 mg/kg.
Acute Toxicity - Dermal	LD50 (rabbit): >18000 mg/kg.
Ingestion	Causes irritation to the gastrointestinal tract. Symptoms may include lack of appetite, headache, drowsiness, salivation, nausea, vomiting and diarrhoea. In high concentrations: narcosis, behavioural effects and respiratory paralysis.
Inhalation	Inhalation can cause severe irritation of mucous membranes in the nose, throat and upper respiratory tract, burning sensation, coughing, wheezing, laryngitis, dyspnoea, lack of appetite, headache, dizziness, drowsiness and a feeling of drunkenness. In high concentrations: salivation, nausea, vomiting, narcosis, possible liver and kidney damage, lung damage and respiratory paralysis.
Skin	Irritating to skin. Symptoms include drying of skin, redness, itching and pain. Repeated exposure or prolonged contact with the skin has a defatting effect and may cause dryness, cracking, rough and chapped skin and possibly dermatitis.
Eye	Causes irritation, redness, and pain.
Carcinogenicity	Not listed in the IARC Monographs.
Reproductive Toxicity	An embryotoxic effect need not be feared when the threshold limit value is observed.
Chronic Effects	Chronic overexposure may cause anaemia with leukocytosis (transient increase in the white blood cell count) and damage to the liver and kidneys. May cause collapse, coma and death (over 10,000 ppm). Repeated exposure or prolonged contact with the skin has a defatting effect and may cause dryness, cracking, rough and chapped skin and possibly dermatitis.
Mutagenicity	No evidence of mutagenic effects.

12. Ecological information

Ecotoxicity	When used properly, no impairments in the function of waste-water-treatment plants are to be expected.
Persistence and degradability	Biologic degradation: Readily biodegradable. 100%: 28 d BOD5: 0.293 g/g; COD: 1.816 g/g; ThOD: 1.82 g/g.
Mobility	Distribution: log P(o/w): 0.66.
Bioaccumulative Potential	Bioaccumulation is not expected.
Environmental Protection	Do not allow to enter waters, waste water, or soil!
Acute Toxicity - Fish	Pimephales promeias LC50: 230 mg/l/96 hr.
Acute Toxicity - Daphnia	Daphnia magna EC50: 717 mg/l/48 h.
Acute Toxicity - Bacteria	Pseudomonas putida EC00: 2900 mg/l/16 h.

13. Disposal considerations

Disposal Considerations	Whatever cannot be saved for recovery or recycling should be disposed of according to relevant local, state and federal government regulations.

14. Transport information

Transport Information	Dangerous goods of Class 3 (Flammable Liquid) are incompatible in a placard load with any of the following: Class 1, Class 2.1, if both the Class 3 and Class 2.1 dangerous goods are in bulk, Class 2.3, Class 4.2,

Issue Date : January 2016

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Classified as hazardous

	Class 5, Class 6, if the Class 3 dangerous goods are nitromethane, Class 7.
U.N. Number	1173
UN proper shipping name	ETHYL ACETATE
Transport hazard class(es)	3
Hazchem Code	•3YE
Packaging Method	3.8.3RT1
Packing Group	II
EPG Number	3A1
IERG Number	18

15. Regulatory information

Regulatory Information	Listed in the Australian Inventory of Chemical Substances (AICS).
Poisons Schedule	Not Scheduled

16. Other Information

Literature References	'Standard for the Uniform Scheduling of Medicines and Poisons No. 15', Commonwealth of Australia, November 2016. Lewis, Richard J. Sr. 'Hawley's Condensed Chemical Dictionary 13th. Ed.', Rev., John Wiley and Sons, Inc., NY, 1997. National Road Transport Commission, 'Australian Code for the Transport of Dangerous Goods by Road and Rail 7th. Ed.', 2007. Safe Work Australia, 'National Code of Practice fot the Preparation of Safety Data Sheets for Hazardous Chemicals', 2011. Standards Australia, 'SAA/SNZ HB 76:2010 Dangerous Goods - Initial Emergency Response Guide', Standards Australia/Standards New Zealand, 2010. Safe Work Australia, 'Approved Criteria for Classifying Hazardous Substances [NOHSC:1008 (2004)]'. Safe Work Australia, 'Hazardous Substances Information System, 2005'. Safe Work Australia, 'National Code of Practice for the Labelling of Safe Work Hazardous Substances (2011)'. Safe Work Australia, 'National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003(1995) 3rd Edition]'.
Contact Person/Point	Paul McCarthy Ph. (08) 8440 2000 DISCLAIMER STATEMENT: All information provided in this data sheet or by our technical representatives is compiled from the best knowledge available to us. However, since data, safety standards and government regulations are subject to change and the conditions of handling and use, or misuse, are beyond our control, we make no warranty either expressed or implied, with respect to the completeness or accuracy to the information contained herein. Bermuda Industrial Supplies accepts no responsibility whatsoever for its accuracy or for any results that may be obtained by customers from using the data and disclaims all liability for reliance on information provided in this data sheet or by our technical representatives.
Empirical Formula & Structural Formula	$CH_3COOC_2H_5$

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