Safety Data Sheet

1. IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product Name: **ETHANOL**

Other name(s): Neutral Grape Spirit; Undenatured Ethanol 95BG; Ethyl Alcohol; Grape Spirit NEU SVR VAT22; AAGRA00004; AAALC57340

Recommended Use of the Chemical and Restrictions on Use Solvent.

Supplier: Ixom Operations Pty Ltd (Bronson & Jacobs division) - incorporated in Australia
ABN: 51 600 546 512
Street Address: 70 Marple Avenue
Villawood NSW 2163
Australia

Telephone Number: +61 2 8717 2929
Facsimile: +61 2 9755 9611
Emergency Telephone: **1 800 033 111 (ALL HOURS)**

Please ensure you refer to the limitations of this Safety Data Sheet as set out in the "Other Information" section at the end of this Data Sheet.

2. HAZARDS IDENTIFICATION

Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the chemical:
Flammable liquids - Category 2
Eye Irritation - Category 2A

SIGNAL WORD: DANGER

Hazard Statement(s):
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary Statement(s):

Prevention:
P210 Keep away from heat, sparks, open flames, hot surfaces. No smoking.
P233 Keep container tightly closed.
P240 Ground or 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.
P264 Wash hands thoroughly after handling.
P280 Wear eye protection.

Response:
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
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.
P370 In case of fire:
P378 Use alcohol resistant foam is the preferred firefighting medium but, if it is not available, fine water spray or water fog can be used to extinguish.

Storage:
P403+P235 Store in a well-ventilated place. Keep cool.

Disposal:
P501 Dispose of contents and container in accordance with local, regional, national, international regulations.

Poisons Schedule (SUSMP): None allocated.

3. COMPOSITION AND INFORMATION ON INGREDIENTS

Components	CAS Number	Proportion	Hazard Codes
Ethyl alcohol	64-17-5	70-100%	H225 H319
Water	7732-18-5	0-30%	-

4. FIRST AID MEASURES

For advice, contact a Poisons Information Centre (e.g. phone Australia 131 126; New Zealand 0800 764 766) or a doctor.

Inhalation:
Remove victim from area of exposure - avoid becoming a casualty. Remove contaminated clothing and loosen remaining clothing. Allow patient to assume most comfortable position and keep warm. Keep at rest until fully recovered. If patient finds breathing difficult and develops a bluish discolouration of the skin (which suggests a lack of oxygen in the blood - cyanosis), ensure airways are clear of any obstruction and have a qualified person give oxygen through a face mask. Apply artificial respiration if patient is not breathing. Seek immediate medical advice.

Skin Contact:
If skin or hair contact occurs, remove contaminated clothing and flush skin and hair with running water. If irritation occurs seek medical advice.

Eye Contact:
If in eyes, hold eyelids apart and flush the eye continuously with running water. Continue flushing until advised to stop by a Poisons Information Centre or a doctor, or for at least 15 minutes.

Ingestion:
Rinse mouth with water. If swallowed, do NOT induce vomiting. Give a glass of water. Never give anything by the mouth to an unconscious patient. Get to a doctor or hospital quickly.

Indication of immediate medical attention and special treatment needed:
Treat symptomatically.

5. FIRE FIGHTING MEASURES

Suitable Extinguishing Media:
Alcohol resistant foam is the preferred firefighting medium but, if it is not available, normal protein foam can be used.

Hazchem or Emergency Action Code: · 2YE

Specific hazards arising from the chemical:
Highly flammable liquid. On burning will emit toxic fumes, including those of oxides of carbon.
Avoid all ignition sources. All potential sources of ignition (open flames, pilot lights, furnaces, spark producing switches and electrical equipment etc) must be eliminated both in and near the work area. Do NOT smoke. Vapour may travel a considerable distance to source of ignition and flash back. May form flammable vapour mixtures with air.

Special protective equipment and precautions for fire-fighters:
Heating can cause expansion or decomposition of the material, which can lead to the containers exploding. If safe to do so, remove containers from the path of fire. Keep containers cool with water spray. Fire fighters to wear self-contained breathing apparatus and suitable protective clothing if risk of exposure to vapour or products of combustion.

6. ACCIDENTAL RELEASE MEASURES

Emergency procedures/Environmental precautions:
Shut off all possible sources of ignition. Clear area of all unprotected personnel. Shut off leak if possible without risk. Work up wind. Use water spray to disperse vapour. If contamination of sewers or waterways has occurred advise local emergency services.

Personal precautions/Protective equipment/Methods and materials for containment and cleaning up:
Slippery when spilt. Avoid accidents, clean up immediately. Wear protective equipment to prevent skin and eye contact and breathing in vapours. Work up wind or increase ventilation. Contain - prevent run off into drains and waterways. Use absorbent (soil, sand or other inert material). Use non-sparking tools. Collect and seal in properly labelled containers or drums for disposal. For large amounts, pump off product.

7. HANDLING AND STORAGE

Precautions for safe handling:
Avoid skin and eye contact and breathing in vapour, mists and aerosols.
May form flammable vapour mixtures with air. Vapour may travel a considerable distance to source of ignition and flash back. All potential sources of ignition (open flames, pilot lights, furnaces, spark producing switches and electrical equipment etc) must be eliminated both in and near the work area. Do NOT smoke. Flameproof equipment is necessary in all areas where this chemical is being used. Nearby equipment must be earthed. Take precautionary measures against static discharges.

Conditions for safe storage, including any incompatibilities:
Store in a cool, dry, well ventilated place and out of direct sunlight. Store away from sources of heat or ignition. Store away from incompatible materials described in Section 10. Keep containers closed when not in use - check regularly for leaks.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ethyl alcohol: 8hr TWA = 1880 mg/m^3 (1000 ppm)

As published by Safe Work Australia Workplace Exposure Standards for Airborne Contaminants.

TWA - The time-weighted average airborne concentration of a particular substance when calculated over an eight-hour working day, for a five-day working week.

These Workplace Exposure Standards are guides to be used in the control of occupational health hazards. All atmospheric contamination should be kept to as low a level as is workable. These workplace exposure standards should not be used as fine dividing lines between safe and dangerous concentrations of chemicals. They are not a measure of relative toxicity.

Appropriate engineering controls:
Ensure ventilation is adequate to maintain air concentrations below Workplace Exposure Standards. Vapour heavier than air - prevent concentration in hollows or sumps. DO NOT enter confined spaces where vapour may have collected. Keep containers closed when not in use.

If in the handling and application of this material, safe exposure levels could be exceeded, the use of engineering controls such as local exhaust ventilation must be considered and the results documented. If achieving safe exposure levels does not require engineering controls, then a detailed and documented risk assessment using the relevant Personal Protective Equipment (PPE) (refer to PPE section below) as a basis must be carried out to determine the minimum PPE requirements.

Individual protection measures, such as Personal Protective Equipment (PPE):
The selection of PPE is dependent on a detailed risk assessment. The risk assessment should consider the work situation, the physical form of the chemical, the handling methods, and environmental factors.

OVERALLS, SAFETY SHOES, CHEMICAL GOGGLES, GLOVES, RESPIRATOR.

Wear overalls, chemical goggles and impervious gloves. Use with adequate ventilation. If determined by a risk assessment an inhalation risk exists, wear an organic vapour respirator meeting the requirements of AS/NZS 1715 and AS/NZS 1716.
Always wash hands before smoking, eating, drinking or using the toilet. Wash contaminated clothing and other protective equipment before storage or re-use.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Clear Liquid
Colour:	Colourless
Odour:	Slight
Odour Threshold:	Not available
Solubility:	Soluble in water.
Specific Gravity:	approx. 0.8
Relative Vapour Density (air=1):	1.59
Vapour Pressure (20 °C):	44 mmHg
Flash Point (°C):	14 (Closed Cup)
Flammability Limits (%):	3.3 - 19.0
Autoignition Temperature (°C):	363
Boiling Point/Range (°C):	78
Decomposition Point (°C):	Not available
pH:	Not available
Viscosity:	Not available
Evaporation Rate:	253 (n-Butyl Acetate = 100)
Partition Coefficient:	Not available
Freezing Point/Range (°C):	-117

10. STABILITY AND REACTIVITY

Reactivity:	Hygroscopic: absorbs moisture or water from surrounding air.
Chemical stability:	Stable under normal conditions of use. Aluminium containers should be avoided as aluminium alcoholates may be formed under certain conditions.
Possibility of hazardous reactions:	Hazardous polymerisation will not occur.
Conditions to avoid:	Avoid exposure to heat, sources of ignition, and open flame.
Incompatible materials:	Incompatible with oxidising agents, acids, acid chlorides, alkali metals, ammonia, potassium tert-butoxide, peroxides.
Hazardous decomposition products:	Oxides of carbon.

11. TOXICOLOGICAL INFORMATION

No adverse health effects expected if the product is handled in accordance with this Safety Data Sheet and the product label. Symptoms or effects that may arise if the product is mishandled and overexposure occurs are:

Ingestion:	Swallowing can result in nausea, vomiting and central nervous system depression. If the victim is showing signs of central system depression (like those of drunkeness) there is greater likelihood of the patient breathing in vomit and causing damage to the lungs. Breathing in vomit may lead to aspiration pneumonia (inflammation of the lung).
Eye contact:	An eye irritant.
Skin contact:	Contact with skin may result in irritation. Will have a degreasing action on the skin. Repeated or prolonged skin contact may lead to irritant contact dermatitis.
Inhalation:	Material may be irritant to the mucous membranes of the respiratory tract (airways). Breathing in vapour can result in headaches, dizziness, drowsiness, and possible nausea. Breathing in high concentrations can produce central nervous system depression, which can lead to loss of co-ordination, impaired judgement and if exposure is prolonged, unconsciousness.

Acute toxicity:
Oral LD50 (rat): 10,470 mg/kg
Inhalation LC50 (rat): 124.7 mg/L/4hr

Skin corrosion/irritation:	Non-irritant (rabbit).
Serious eye damage/irritation:	Irritant (rabbit).
Respiratory or skin sensitisation:	Not classified.

Chronic effects: Repeated or prolonged exposure to this material could result in effects on the liver, kidneys, gastrointestinal tract and heart muscle.

Mutagenicity:	Not classified.
Carcinogenicity:	Not classified. IARC has evaluated ethanol as a carcinogen on the basis of effects of drinking alcoholic beverages, but there is no known carcinogenic risk from occupational exposures.
Reproductive toxicity:	Not classified.
Specific Target Organ Toxicity (STOT) - single exposure:	Not classified.
Specific Target Organ Toxicity (STOT) - repeated exposure:	Not classified.
Aspiration hazard:	Not classified.

A study of the effects of ethanol inhalation in humans found that at between 5000-10000 ppm subjects experienced coughing and smarting of the eyes and nose, with symptoms disappearing within minutes. People exposed at 15000 ppm experienced continuous lacrimation and coughing. Irritation of the eyes and respiratory tract were not noted at concentrations below 5000 ppm. Repeated or prolonged exposure to relatively high doses of ethanol may result in damage to the liver leading to cirrhosis.

There is no clear evidence that ethanol is carcinogenic in laboratory animals; it is however a tumour promoter. Ethanol is typically inactive in genotoxic assays, but on some occasions a weak response has been noted. Oral exposure to ethanol produces malformations and developmental toxicity in rats and mice at maternally toxic doses. No developmental effects were observed in rats from inhalation at doses up to 20,000 ppm. Estimated fatal dose (human): 300-400 ml.
In work areas where exposures at levels at or exceeding the occupational exposure limits or any deliberate ingestion occurs, it may lead to health effects which may be evident in themselves or lead to impaired functioning and consequent safety risks in the industrial setting. A blood alcohol level in excess of 0.05g/100mL is regarded as likely to impair functioning for tasks such as operating machinery.

12. ECOLOGICAL INFORMATION

Ecotoxicity	Avoid contaminating waterways.
Persistence/degradability:	The material is readily biodegradable.
Bioaccumulative potential:	This product shows a low bioaccumulation potential.
Mobility in soil:	No information available.
96hr LC50 (fathead minnow):	15.3 mg/L

13. DISPOSAL CONSIDERATIONS

Disposal methods:
Refer to Waste Management Authority. Dispose of contents and container in accordance with local, regional, national, international regulations. Advise flammable nature. Normally suitable for incineration by an approved agent.

14. TRANSPORT INFORMATION

Road and Rail Transport
Classified as Dangerous Goods by the criteria of the Australian Dangerous Goods Code (ADG Code) for Transport by Road and Rail; DANGEROUS GOODS.

UN No:	1170
Transport Hazard Class:	3 Flammable Liquid
Packing Group:	II
Proper Shipping Name or Technical Name:	ETHANOL (ETHYL ALCOHOL)
Hazchem or Emergency Action Code:	· 2YE

Marine Transport
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea; DANGEROUS GOODS.

UN No:	1170
Transport Hazard Class:	3 Flammable Liquid
Packing Group:	II
Proper Shipping Name or Technical Name:	ETHANOL (ETHYL ALCOHOL)
IMDG EMS Fire:	F-E
IMDG EMS Spill:	S-D

Air Transport
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air; DANGEROUS GOODS.

UN No:	1170
Transport Hazard Class:	3 Flammable Liquid
Packing Group:	II
Proper Shipping Name or Technical Name:	ETHANOL

15. REGULATORY INFORMATION

Classification:
This material is hazardous according to Safe Work Australia; HAZARDOUS CHEMICAL.

Classification of the chemical:
Flammable liquids - Category 2
Eye Irritation - Category 2A

Hazard Statement(s):
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Poisons Schedule (SUSMP): None allocated.

All the constituents of this material are listed on the Australian Inventory of Chemical Substances (AICS).

16. OTHER INFORMATION

Supplier Safety Data Sheet; 06/ 2018.

This safety data sheet has been prepared by Ixom Operations Pty Ltd (Toxicology & SDS Services).

Reason(s) for Issue:
5 Yearly Revised Primary SDS
Change in Hazardous Chemical Classification
Change in Personal Protection Requirements

This SDS summarises to our best knowledge at the date of issue, the chemical health and safety hazards of the material and general guidance on how to safely handle the material in the workplace. Since Ixom Operations Pty Ltd cannot anticipate or control the conditions under which the product may be used, each user must, prior to usage, assess and control the risks arising from its use of the material.

If clarification or further information is needed, the user should contact their Bronson & Jacobs representative or Ixom Operations Pty Ltd at the contact details on page 1.

Ixom Operations Pty Ltd's responsibility for the material as sold is subject to the terms and conditions of sale, a copy of which is available upon request.

Bronson and Jacobs incorporating the businesses of Woods and Woods and Keith Harris.