Material Safety Data Sheet
SATURATED MONOHYDRIC ALCOHOL

Section 1 - Product Identification

Synonyms : acetone alcohol / alcohol C1 / alcohol, methyl / carbinol / colonial spirits / columbian spirits / green wood spirits / manhattan spirits / methyl alcohol / methyl hydrate / methyl hydroxide / methylen / methylol /monohydroxymethane / pyroligneous spirit / pyroxylic spirit / wood alcohol / wood naphtha
Molecular Weight : 32.04 g/mol
Chemical Formula : CH_4O
Company Identification : Tradeasia International Pte. Limited
Address : 133 Cecil Street # 12-03 Keck Seng Tower, Singapore
Tel: +65-6227 6365
Fax: +65-6225 6286
Email: contact@chemtradeasia.com
Recommended use of the chemical and restrictions on use
The product is used in industrial manufacturing, in particular in :
- Soap and Detergent

Section 2 – Composition/Information on Ingredients

Chemical Name	EC No/CAS No	Purity, %
Saturated Monohydric Alcohol	- / 67-56-1	max. 99.9

Section 3 – Hazards Identification

3.1 Classification
Classification according to Regulation (EC) No 1272/2008
GHS US classification
Flammable liquids Category 2 H225 Highly flammable liquid and vapor
Acute toxicity (oral) Category 3 H301 Toxic if swallowed
Acute toxicity (dermal) Category 3 H311 Toxic in contact with skin
Acute toxicity (inhalation) Category 3 H331 Toxic if inhaled
Specific target organ toxicity (single exposure) Category 1 H370 Causes damage to organs (liver, kidneys, central nervous system, optic nerve) (Dermal, oral)

3.2 Label elements
Signal Word
Danger
Hazard Statements
H225 - Highly flammable liquid and vapor
H301+H311+H331 - Toxic if swallowed, in contact with skin or if inhaled
H370 - Causes damage to organs (liver, kidneys, central nervous system, optic nerve) (Dermal, oral)

Precautionary Statements
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.
P260 - Do not breathe mist, vapors, spray.
P264 - Wash exposed skin thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves, protective clothing, eye protection, face protection.
P301+P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician.
P303+P361+P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P330 - If swallowed, rinse mouth
P363 - Wash contaminated clothing before reuse.
P370+P378 - In case of fire: Use carbon dioxide (CO2), powder, alcohol-resistant foam to extinguish
P403+P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to comply with local, state and federal regulations

Section 4 – Composition/ information on ingredients

4.1 Composition comments
Component Saturated Monohydric Alcohol
CAS No. 67-56-1
Weight 100

Section 5 – First-Aid Measures

5.1. Description of first aid measures
Skin contact
Wash immediately with lots of water. Soap may be used. Do not apply (chemical) neutralizing agents. Remove clothing before washing. Consult a doctor/medical service.
Eye contact
Rinse with water. Remove contact lenses, if present and easy to do. Continue rinsing. Take victim to an ophthalmologist if irritation persists.
Inhalation
Remove the victim into fresh air. Immediately consult a doctor/medical service.
Ingestion
Rinse mouth with water. Immediately after ingestion, give alcohol to drink. Give nothing to drink. Do not induce vomiting. Immediately consult a doctor/medical service. Take the container/vomit to the doctor/hospital. Call Poison Information Centre (www.big.be/antigif.htm).

5.2. Most important symptoms and effects, both acute and delayed
Potential Adverse human health effects and symptoms : Toxic in contact with skin. Toxic if swallowed. Toxic if inhaled.

Symptoms/effects after inhalation : EXPOSURE TO HIGH CONCENTRATIONS: Coughing. Symptoms similar to those listed under ingestion.
Symptoms/effects after skin contact : Symptoms similar to those listed under ingestion.
Symptoms/effects after eye contact : Redness of the eye tissue. Lacrimation.

5.3. Indication of any immediate medical attention and special treatment needed

Immediately after ingestion, give a glass of strong drink, beer or wine to drink. Hospitalize at once for treatment with the right antidotes.

Section 6 – Fire Fighting Measures

6.1. Suitable Extinguishing media

Quick-acting ABC powder extinguisher. Quick-acting BC powder extinguisher. Quick-acting class B foam extinguisher. Quick-acting CO2 extinguisher. Class B foam (alcohol-resistant). Water spray if puddle cannot expand.

6.2. Specific hazards arising from the chemical

Fire hazard : DIRECT FIRE HAZARD. Highly flammable liquid and vapour. Gas/vapor flammable with air within explosion limits. INDIRECT FIRE HAZARD. May be ignited by sparks.
Explosion hazard : DIRECT EXPLOSION HAZARD. Gas/vapour explosive with air within explosion limits. INDIRECT EXPLOSION HAZARD. may be ignited by sparks. Reactions with explosion hazards: see "Reactivity Hazard".
Hazardous decomposition products in case of fire : Upon combustion: CO and CO2 are formed.

6.3. Special protective actions for fire-fighters

Cool tanks/drums with water spray/remove them into safety. Do not move the load if exposed to heat. Take account of toxic fire-fighting water. Use water moderately and if possible collect or contain it. Do not enter fire area without proper protective equipment, including respiratory protection.

Section 7 – Accidental Release Measures

7.1. Personal precautions, protective equipment and emergency procedures

General measures : No flames, no sparks. Eliminate all sources of ignition. No naked lights. No smoking. Dike and contain spill.

For non-emergency personnel

Protective equipment : Gas-tight suit.
Emergency procedures : Keep upwind. Mark the danger area. Consider evacuation. Close doors and windows of adjacent premises. Stop engines and no smoking. No naked flames or sparks. Spark- and explosion-proof appliances and lighting equipment. Keep containers closed. Wash contaminated clothes.

For emergency responders

Protective equipment : Equip cleanup crew with proper protection.
Emergency procedures : Stop leak if safe to do so. Ventilate area.

7.2. Environmental precautions

Prevent soil and water pollution. Prevent spreading in sewers.

7.3. Methods and material for containment and cleaning up

For containment

Contain released substance, pump into suitable containers. Plug the leak, cut off the supply. Dam up the liquid spill. Try to reduce evaporation. Measure the concentration of the explosive gas-air mixture. Dilute

combustible/toxic gases/vapours with water spray. Take account of toxic/corrosive precipitation water. Provide equipment/receptacles with earthing. Do not use compressed air for pumping over spills.

Methods for cleaning up

Take up liquid spill into a non combustible material e.g.: sand, earth, vermiculite slaked lime or soda ash. Scoop absorbed substance into closing containers. Carefully collect the spill/leftovers. Damaged/cooled tanks must be emptied. Do not use compressed air for pumping over spills. Clean contaminated surfaces with an excess of water. Take collected spill to manufacturer/competent authority. Wash clothing and equipment after handling.

Section 8 – Handling and Storage

8.1. Precautions for safe Handling

Use spark-/explosionproof appliances and lighting system. Take precautions against electrostatic charges. Keep away from naked flames/heat. Keep away from ignition sources/sparks. Measure the concentration in the air regularly. Work under local exhaust/ventilation. Comply with the legal requirements. Remove contaminated clothing immediately. Clean contaminated clothing. Handle uncleaned empty containers as full ones. Thoroughly clean/dry the installation before use. Do not discharge the waste into the drain. Do not use compressed air for pumping over. Keep container tightly closed.

8.2. Conditions for safe storage, including any incompatibilities

Incompatible products	: Strong oxidizers. Strong bases. Strong acids. Acid anhydrides. Acid chlorides.
Incompatible materials	: Direct sunlight. Heat sources. Sources of ignition.
Heat-ignition	: KEEP SUBSTANCE AWAY FROM: heat sources. ignition sources.
Prohibitions on mixed storage	: KEEP SUBSTANCE AWAY FROM: combustible materials. oxidizing agents. strong acids. (strong) bases. halogens. amines. water/moisture.
Storage area	: Store in a cool area. Store in a dry area. Keep container in a well-ventilated place. Fireproof storeroom. Keep locked up. Provide for a tub to collect spills. Provide the tank with earthing. Unauthorized persons are not admitted. Aboveground. Meet the legal requirements.
Special rules on packaging	: SPECIAL REQUIREMENTS: closing. dry. clean. correctly labelled. meet the legal requirements. Secure fragile packagings in solid containers.
Packaging materials	: SUITABLE MATERIAL: steel. stainless steel. iron. glass. MATERIAL TO AVOID: lead. aluminium. zinc. polyethylene. PVC.

Section 9 – Exposure Controls/Personal Protection

9.1. Appropriate engineering controls

Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. Keep concentrations well below lower explosion limits.

9.2. Individual protection measures, such as personal protective equipment (PPE)

Respiratory protection

Full face mask with filter type AX at conc. in air > exposure limit. High vapour/gas concentration: self-contained respirator

Eyes and face protection

Safety glasses

Skin and body protection

Head/neck protection. Protective clothing

Hygiene Measures
Do not eat, drink or smoke when using this product. Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Wash contaminated clothing before reuse.

Section 10 – Physical and Chemical Properties
10.1. Information on basic physical and chemical properties
Appearance : Colourless, Liquid
Odour : Characteristic odour Mild odour Pleasant odour Alcohol odour Commercial/unpurified
Odour threshold : N.A.
pH : N.A.
Melting point : -97.8 °C
Boiling point : 64.7°C
Flash point : 9.7 °C
Evaporation rate : N.A.
Flammability : Not Applicable
Upper/lower flammability or explosive limits : N.A.
Vapour pressure : 128 hPa (20 °C)
Vapour density : 1.1 (20 °C)
Relative density : 0.79 – 0.8 (20 °C)
Solubility : Soluble in water. Soluble in ethanol. Soluble in ether. Soluble in acetone. Soluble in chloroform.
Water: 100 g/100ml (20 °C)
Partition coefficient: n-octanol/water : 1 (20 °C) (ECHA)
Auto-ignition temperature : 455 °C (1013 hPa, DIN 51794: Self-ignition temperature)
Decomposition temperature : N.A
Viscosity : 0.544 – 0.59 mPa·s (25 °C) (Dynamic Viscosity)

10.2. Other information
Molecular weight : 32.04 g/mol
Specific gravity : 790 – 800 kg/m³ (20 °C)

Section 11 – Stability and Reactivity
11.1. Reactivity
Violent to explosive reaction with (some) metal powders and with (strong) oxidizers. Violent exothermic reaction with (some) acids and with (some) halogens compounds.

11.2. Chemical stability
Hygroscopic.

11.3. Possibility of hazardous reactions
No additional information available

11.4. Conditions to avoid:
Direct sunlight. High temperature. Incompatible materials. Open flame. Sparks. Overheating.

11.5. Incompatible materials
Strong oxidizers. Strong bases. Strong acids. Peroxides. Acid anhydrides. Acid chlorides.

11.6. Hazardous decomposition products
Carbon dioxide. Carbon monoxide.

Section 12 – Toxicological Information

12.1 Health effects associated with ingredients
LD50 Oral 1,580 mg/kg (Mouse)
LC50 inhalation: dust/mist >4,178 mg/m³/4h (Rat)

12.2 Health effects associated with compounds formed during processing
Delayed and immediate effects as well as chronic effects from short and long-term exposure

12.3 Information on likely routes of exposure
Inhalation, Skin contact, Ingestion, Eye contact

Section 13 – Ecological Information

13.1. Toxicity
Freshwater fish
15400 mg/l (EPA 660/3 - 75/009, 96 h, Lepomis macrochirus, Flow-through system, Fresh water, Experimental value, Lethal)
Water Fleas
Not Listed

13.2.3. Bioaccumulative potential
Low potential for bioaccumulation (BCF < 500).

13.4. Mobility in soil
Highly mobile in soil.

13.5. Other adverse effects
Data are not available.

Section 14 – Disposal Considerations

14.1. Disposal methods
Waste Disposal Recomendation
Do not discharge into drains or the environment. Remove waste in accordance with local and/or national regulations. Hazardous waste shall not be mixed together with other waste. Different types of hazardous waste shall not be mixed together if this may entail a risk of pollution or create problems for the further management of the waste. Hazardous waste shall be managed responsibly. All entities that store, transport or handle hazardous waste shall take the necessary measures to prevent risks of pollution or damage to people or animals. Recycle by distillation. Incinerate under surveillance with energy recovery. Obtain the consent of pollution control authorities before discharging to wastewater treatment plants.

Section 15 – Transport Information

.
15.1. UN number : UN1230
15.2. UN proper shipping name : UN1230 Saturated Monohydric Alcohol
15.3. Transport of hazard classes : 3
15.4. Packing group : II
15.5. Environmental hazards : N.A.
15.6. Special precautions for user : N.A.
15.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: N.A.

Section 16 – Regulatory Information

15.1. Safety, health and environmental regulations
US Federal regulations
Listed on the United States TSCA (Toxic Substances Control Act) inventory Subject to reporting requirements of United States SARA Section 313
RQ (Reportable quantity, section 304 of EPA's List of Lists) 5000 lb
SARA Section 311/312 Hazard Classes
International Inventories
Listed on the Canadian DSL (Domestic Substances List)

Ensure all national/local regulations are observed.

Section 16 : Additional Information

16.1. Mainly changes made to the previous version of this Material Safety Data Sheet (MSDS):
This document has been updated to comply with the US OSHA HazCom 2012 Standard replacing the current legislation under 29 CFR 1910.1200 to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS).

Revision No	Revision content
05	• This SDS is updated in accordance with the GHS (Rev.6) (2015)-Guidance on the Compilation of Safety data Sheets.

16.2. List of abbreviation and acronyms used in this MSDS
SDS : Safety Data Sheets
Index N° : atomic number of the element most characteristic of the properties of the substance
CAS No : Chemical Abstracts Service number
EC No : EINECS Number : European Inventory of Existing Commercial Substances
Repr. Cat. 2 : Substance presumed human reproductive toxicant
Acute Oral Cat. 5 : Substance which is of relatively low acute oral toxicity.
GHS : Globally Harmonised System of Classification and Labelling
LD_{50} : Median Lethal Dose
LC_{50} : Lethal Concentration, 50%
N.A. : Not Applicable
OSHA : Occupational Safety & Health Administration
Cal OSHA : The State of California Division of Occupational Safety and Health (DOSH)
PEL : Permissible Exposure Limits
ACGIH : American Conference of Governmental Industrial Hygienists
TLV : Threshold Limit Value
Japanese MITI : Japanese Ministry of International Trade and Industry

EC_{50} : Half maximal effective concentration
UN : United Nations
U.S. EPA TSCA Inventory: Inventory of the chemical substances manufactured or processed in the United States according to Toxic Substances Control Act compiled and published under the autority of the Environmental Protection Agency
Canadian DSL: Canadian Domestic Substances List

16.3. List of relevant hazard statements and precautionary statements used in this MSDS

Hazard Statement
H361 d: Suspected of damaging the unborn child
H319: Causes serious eye irritation
H303: May be harmful if swallowed

Precautionary Statements

Prevention
P201: Obtain special instructions before use.
P202: Do not handle until all safety precautions have been read and understood.
P281: Use personal protective equipment as required.
P264: Wash eyes thoroughly after handling.
P280: Wear protective gloves/ protective clothing/ eye protection/ face protection.

Response
P308 + P313: If exposed or concerned: get medical advice/attention.
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.

Storage
P405: Store locked up.

Disposal
P501: Dispose of contents/container to in accordance with local regulations.

16.4. References

1. Litovitz T L, Norman S A, Veltri J C, Annual Report of the American Association of Poison Control Centers Data Collection System. Am. J. Emerg. Med. (1986), 4, 427-458
2. Denton SM (1996). Acute oral toxicity study in the rat: anhydrous boric acid. Final report. Report no.: 1341/7-1032.
3. National Toxicology Program (NTP) – Technical Report Series No. TR324, NIH Publication No. 88 2580 (1987), PB88 213475/XAB
4. Fail et al., Fund. Appl. Toxicol. (1991) 17, 225-239
5. Heindel et al., Fund. Appl. Toxicol. (1992) 18, 266-277
6. Birge W J, Black J A, EPA-560/-76-008 (April 1977) PB 267 085
7. Scialli AR, Bonde JP, Brüske-Hohlfeld I, Culver D, Li Y, Sullivan FM; ELSEVIER 2009
8. Robbins WA, Xun L, Jia J, Kennedy N, Elashoff DA, Ping L. ;ELSEVIER 2009;(Reproductive Toxicology)
9. Hansveit and Oldersma, 2000; TNO Nutrition and Food Research Institute. Report No. V99.157.
10. Gersich, FM (1984a). Environ.Toxicol.Chem., 3 #1, 89-94 (1984)
11. Soucek et al., 2010. Illinois Natural History Survey, University of Illinois.

For general information on the toxicology of borates see ECETOC Technical Report No. 63 (1995); Patty's Industrial Hygiene and Toxicology, 4th Edition Vol. II, (1994) Chap. 42, 'Boron'.

16.5. Disclaimer of Liability

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its accuracy, reliability or completeness. The conditions or methods of handling, storage use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and

expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. It is the user's responsibility to satisfy himself as to the suitableness and completeness of such information for his own particular use.
This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, this MSDS information may not be applicable.