SAFETY DATA SHEET

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061ND Ethanol 96%

1. SUBSTANCE AND COMPANY IDENTIFICATION

Substance Identification:	Natural Denatured Ethanol 96.2% Acetaldehyde blend
Synonym	Ethanol 96.2 Acetaldehyde
Recommended use:	Extraction base Laboratory chemical Manufacture of substances Disinfectant
Restriction on use:	Do not use for products in contact with foodstuff. Do not use for private purposes.
Supplier:	iSolvents Plot 62 Kameelfontein Pretoria 0075 South Africa Tel +27(0)12 012 5157
Emergency Telephone Numbers:	Rapid Spill Response 0800172743

2. HAZARD IDENTIFICATION

Classification according to SANS10228

Hazard class	Category	Hazard class and category	Hazard statement
Flammable liquid	2	Flammable Liquid 2	H225
Serious eye damage/eye irritation	2	Eye Irritant 2	H319
Germ cell mutagenicity	2	Germ cell mutagen 2	H341
Carcinogenicity	1B	Carcinogen 1B	H350
Specific target organ toxicity – single exposure	3	STOT-single exposure 3	H335

The most important adverse physical hazard, human health hazard and environmental hazard
The product is combustible and can be ignited by potential ignition sources
The product is toxic when taken into the body

Label elements according to the Global Harmonized System

Signal word **Danger**

Pictograms

GHS02, GHS08, GHS07

Hazard statements

H225	Highly flammable liquid and vapour
H319	Causes serious eye irritation
H335	May cause respiratory irritation
H341	Suspected of causing genetic defects
H350	May cause cancer

Precautionary statements

Prevention statements

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.

Response statements

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

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance	Chemical identity	Common name	EC-No	CAS-No	Index-No	Reach Reg. No
1	Ethanol	Grain Alcohol	200-578-6	64-17-5	603-002-00-5	01-2119457610-43-xxxx
2	Acetaldehyde	Ethanal	200-836-8	75-07-0	605-003-00-6	01-2119451152-51-xxxx

4. FIRST AID

Eye Contact	Immediately irrigate with clean, fresh water whilst holding the eyelids apart, for at least 10 minutes. If eye irritation persists consult and ophthalmologist.
Inhalation	Provide fresh air. If the person is not breathing give artificial respiration if possible. In cases of doubt or if symptoms persist seek medical advice.
Ingestion	Do not induce vomiting. Rinse the mouth and give copious amount of water to drink. Seek medical attention.
Notable symptoms, acute and delayed	Irritation, Nausea, Vomiting, Abdominal pain, Breathing difficulties, Vertigo, Drowsiness, Narcosis, Loss of righting reflex, and ataxia

Further medical remarks	No known systemic effects. No specific antidote treatment. The only delayed effect can be local tissue damage.

5. FIRE FIGHTING

Extinguishing media

Suitable extinguishing media	Class B fire extinguishers, carbon dioxide (CO2) fire extinguishers, dry extinguishing powder, alcohol resistant foam, water spray.
Unsuitable extinguishing media	Water jet
Special hazards arising from the substance	Combustible. In the case of insufficient ventilation it may form explosive vapour mixtures with the air. Vapours are heavier than air so it spreads along the floors. Do not allow run-off into trenches, conduits and shafts. Pay attention to flashback.
Special protective equipment and precautions for fire-fighters	In the case of fire or explosions do not breathe in the fumes. Fight fire with the normal precautions from a reasonable distance. Wear self-contained breathing apparatus and protective clothing.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures:

For non-emergency personnel
Avoid contact with skin, eyes and clothes. Do not breathe in vapour or spray. Avoid sources of ignition.

Environmental precautions:

Keep away from drains, surface, and ground water. Avoid subsoil penetration. Danger of explosion.

Methods and material for containment and cleaning up:

1. Wear full protective clothing
2. Contain a spill by covering drains
3. Absorb with liquid-binding material like sand or universal binding agents that are inert (sand, silica gel, acid binder sawdust).
4. Place spillage in appropriate disposal container
5. Ventilate affected area

Neutralizing chemicals: alcohol-resistant foam, dry powder and water.

7. HANDLING AND STORAGE

Precautions for safe handling:

Measures to prevent fire as well as aerosol generation	Work under hood. Provide sufficient ventilation. Keep away from sources of ignition. No smoking. Take precautionary measures against static discharge. Due to danger of explosion always prevent leakage of vapours into ditches.
Advice on general occupational hygiene	Immediately change contaminated clothing. Wash hands before breaks and after work. Keep away from food, drink and animal feed when handling. Avoid 40°C and freezing.

Conditions for safe storage, including incompatibilities:

Safe storage	Store in a well-ventilated place. Use local and general ventilation. Keep container tightly closed. Protect from sunlight.
Storage temperature	Between 2-8°C
Incompatible substances or mixtures	Storage class 3 – do not store with metals

8. EXPOSURE CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT

Control parameters

Occupational Exposure Limit Values				
Country	**Name of agent**	**CAS No**	**Time Weighted Average (ppm)**	**Short-term Exposure Limits (ppm)**
RSA	Ethanol	64-17-5	1000	1000
RSA	Acetaldehyde	75-07-0	200	150

TWA: Time-weighted average (long-term exposure limit) measured in relation to a reference period of 8 hours.
STEL: Short-term exposure limit above which exposure should not occur within a 15-minute period.

Individual protection measures

Protective equipment	Eye protection: safety goggles with side protection Skin protection: suitable gloves made out of butyl rubber of 0.7mm thickness Wear flame retardant protective clothing Respiratory protection: Not required for normal conditions of use
Other protection measures	Take recovery periods for skin regeneration if the skin is damaged. Use creams as a barrier to exposure
Environmental exposure Control	Keep away from drains and ground water.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid at 20°C, 1,013 hPa
Colour	Colourless
Odour	Characteristic Sanitizer
pH	7 (20°C)
Melting point / freezing point	-115°C
Initial boiling point and boiling range	77°C - 80°C at 1.013 hPa
Flash point	12°C (closed cup)
Evaporation rate	2.5 – 2.83 times higher than water
Flammability	Flammable liquid in accordance with GHS criteria
Upper and lower explosive limits	27,7 vol% (UEL) and 3,1 vol% (LEL)
Vapour pressure	100 hPa at 37.7°C
Vapour density	Heavier than air
Density	0.789 kg/dm^3 at 20°C
Partition coefficient	-0,31 (log value)
Auto-ignition temperature	360°C
Decomposition temperature	975 – 1400°C
Viscosity	1.1 cP at 25°C

10. STABILITY AND REACTIVITY

Reactivity	It's a reactive substance but stable under normal conditions. There is risk of ignition, especially if heated. Vapours may form explosive mixtures with air and aluminium.
Chemical stability	The material is stable under normal temperature and pressure, in ambient, anticipated storage and handling conditions.
Possibility of hazardous reactions	Violently reacts with strong oxidisers like Alkali metals, Alkaline Earth metals.
Conditions to avoid	Keep away from heat, hot surfaces, sparks and open flames. No smoking
Incompatible materials	Strong oxidizing agents
Hazardous decomposition products	Carbon monoxide and Carbon dioxide

11. TOXICOLOGY

Hazard classification according to GHS

Acute toxicity Shall not be classified as acutely toxic

Ethanol Toxicity	
Exposure route	**Toxicity value**
Oral	10.47mg per kg
Vapour inhalation	124,7mg every four hours

Acetaldehyde Toxicity	
Exposure route	**Remarks**
Skin corrosion/irritation	May cause minor allergy
Serious eye damage/irritation	Mild upper respiratory irritant
Germ cell mutagenicity	Evidence of genetic defects
Carcinogenic	Possible carcinogen
Specific Target organ toxicity – single exposure	May cause respiratory irritation

Skin corrosion/irritation
Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation
Causes serious eye irritation

Respiratory or skin sensitisation
Shall not be classified as a respiratory or skin sensitiser

Germ cell mutagenicity
Suspected of causing genetic defects

Carcinogenicity
Presumed to have carcinogenic potential for humans

Reproductive toxicity
Shall not be classified as a reproductive toxicant

Single exposure for specific target organ
May cause respiratory irritation

Repeated exposure for specific target organ
Shall not be classified as a specific target organ toxicant for repeated exposure

Aspiration hazard
Shall not be classified as presenting an aspiration hazard

Endocrine disrupting properties
None

Symptoms related to the physical, chemical and toxicological characteristics	
If swallowed	Vomiting, abdominal pain, nausea, causes damage to liver through prolonged or repeated swallowing, loss of righting reflex and ataxia.

If in eyes	Causes serious eye irritation
If inhaled	Drowsiness, narcosis, vertigo, breathing difficulties and inebriation
If on skin	Prolonged or repeated skin contact may cause removal of natural fat from the skin, causing skin inflammation and dermatitis.

12. ECOLOGY

Toxicity classification according to GHS

Toxicity Shall not be classified as hazardous to the aquatic environment

Aquatic toxicity of Ethanol		
Toxicity value	**Species**	**Exposure time**
15.4mg per litre	fish	96 hours
10mg per litre	Aquatic invertebrates	48 hours
22mg per litre	algae	96 hours

Aquatic toxicity of Acetaldehyde		
Toxicity value	**Species**	**Exposure time**
31mg per litre	fish	96 hours
48.3mg per litre	Aquatic invertebrates	48 hours
100mg per litre	algae	72 hours

Persistence and degradability The substance is readily biodegradable

Bio-accumulative potential It does not significantly accumulate in organisms

Mobility in soil No significant data on this

Endocrine disrupting properties None

13. DISPOSAL CONSIDERATIONS

Waste residues The material, and its waste residues, and its container must be disposed of as hazardous waste in accordance with SANS10234.

Safe Handling Do not empty into drains. Contain in a High-Density Poly-Ethylene (HDPE) plastic drum for disposal. Wear Personal Protective Equipment when handling and disposing the waste. Product waste must be segregated and handled separately by local and national waste management facilities.

Methods of disposal The waste drums must be given a serial number to identify it, its location, and its contents. Product waste can be landfilled or treated.

Contaminated packaging Dispose of with the waste.

14. TRANSPORT

Road, sea and air shipping codes
ADRRID – transport of dangerous goods by road
IMDG-Code – International Maritime Dangerous Goods for Marine environment
ICAO-TI – International Civil Aviation Organization

Ethanol

UN number or ID number

ADRIDD	UN1170
IMDG-Code	UN1170
ICAO-TI	UN1170

UN proper shipping name

ADRRID	ETHANOL
IMDG-Code	ETHANOL
ICAO-TI	ethanol

Transport hazard class(es)

ADRRID	3
IMDG-Code	3
ICAO-TI	3

Packaging group

ADRRID	II
IMDG-Code	II
ICAO-TI	II

Danger label(s)

Acetaldehyde

UN number or ID number

ADRIDD	UN1993
IMDG-Code	UN1993
ICAO-TI	UN1993

UN proper shipping name

ADRRID	FLAMMABLE LIQUID, N.O.S. (acetaldehyde, ethanol)
IMDG-Code	FLAMMABLE LIQUID, N.O.S. (acetaldehyde, ethanol)
ICAO-TI	flammable liquid, n.o.s. (acetaldehyde, ethanol)l

Transport hazard class(es)

ADRRID	3
IMDG-Code	3
ICAO-TI	3

Packaging group

ADRRID	II
IMDG-Code	II
ICAO-TI	II

Danger label(s)

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question

Regulatory reference	SANS 10234; SANS 11014; SANS 10228; SANS 10229; SANS10231/2/3; Occupational Health and Safety Act 85 of 1993; National Road Traffic Act 93 of 1996

16. OTHER

Labelling according to SA directives.

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 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.

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Full text of H-statements

H224	Extremely flammable liquid and vapour
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation
H335	Highly flammable liquid and vapour
H336	May cause drowsiness or dizziness
H341	Causes serious eye irritation