

## Ethane

C<sub>2</sub>H<sub>6</sub>**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

<b>Name of product</b>	Ethane Art-Nr(n): 1003 - 1009
<b>Name of substance</b>	ethane
<b>Index No</b>	601-002-00-X
<b>EC No</b>	200-814-8
<b>REACH registration number</b>	01-2119486765-21
<b>CAS No</b>	74-84-0

**Manufacturer / Distributor:****Ehsan International Gases**

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**1.2. Relevant identified uses of the substance or mixture and uses advised against****Identified uses****! Sector of uses [SU]**

SU10 - Formulation [mixing] of preparations and/or re-packaging (excluding alloys)

SU0 - Other

SU8 - Manufacture of bulk, large scale chemicals (including petroleum products) SU9

- Manufacture of fine chemicals

**! Product categories [PC]**

PC1 - Adhesives, sealants

PC13 - Kraftstoffe

PC2 - Adsorbents

PC3 - Air care products

PC31 - Polishes and wax blends

PC35 - Washing and cleaning products (including solvent based products)

PC39 - Cosmetics, personal care products

PC4 - Anti-freeze and de-icing products

PC0 - Other

**! Process categories [PROC]**

PROC1 - Use in closed process, no likelihood of exposure

PROC2 - Use in closed, continuous process with occasional controlled exposure

PROC3 - Use in closed batch process (synthesis or formulation)

PROC4 - Use in batch and other process (synthesis) where opportunity for exposure arises

PROC5 - Mixing or blending in batch processes for formulation of preparations and articles (multistage and/or significant contact)

PROC6 - Calendering operations

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PROC8a - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at nondedicated facilities

PROC9 - Transfer of substance or preparation into small containers (dedicated filling line, including weighing)

PROC12 - use of blowing agents in manufacture of foam

PROC13 - Treatment of articles by dipping and pouring

PROC14 - production of preparations or articles by tableting, compression, extrusion, pelettisation

PROC16 - Using material as fuel sources, limited exposure to unburned product to be expected

PROC8b - Transfer of substance or preparation (charging/discharging) from/to vessels/large containers at dedicated facilities

PROC21 - Low energy manipulation of substances bound in materials and/or articles PROC11

- Non industrial spraying

PROC15 - Use as laboratory reagent

PROC20 - Heat and pressure transfer fluids in dispersive, professional use but closed systems PROC21

- Low energy manipulation of substances bound in materials and/or articles

### ! Environmental release categories [ERC]

ERC1 - Manufacture of substances

ERC7 - Industrial use of substances in closed systems

ERC8a - Wide dispersive indoor use of processing aids in open systems

ERC9a - Wide dispersive indoor use of substances in closed systems

ERC9b - Wide dispersive outdoor use of substances in closed systems

ERC2 - Formulation of preparations (mixtures)

ERC5 - Industrial use resulting in inclusion into or onto a matrix

ERC6a - Industrial use resulting in manufacture of another substance (use of intermediates)

### Uses advised against

#### Remark

Do not use for inflating balloons.

### ! Recommended intended purpose(s)

Fuel gas.

Basic substance.

Foam expansion agent.

Propellant.

Laboratory reagent.

Fuel.

Refrigerant (R-170)

## SECTION 2: Hazards identification

### 2.1. Classification of the substance or mixture

#### Classification according to 67/548/EEC or 1999/45/EC

F+; R12 R-

#### phrases

12 Extremely flammable.

#### Additional hints

Listed substance (Regulation (EC) No 1272/2008, Annex VI, part 3).

#### Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]

Hazard classes and Hazard	Hazard Statements	Classification procedure categories
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#### Classification according to Regulation (EC) No 1272/2008 [CLP/GHS]

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Hazard classes and Hazard categories	Hazard Statements	Classification procedure
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Flam. Gas 1	H220	
Liquef. Gas	H280	

**Hazard statements for physical hazards**

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.

**Additional hints**

Listed substance (Regulation (EC) No 1272/2008, Annex VI, part 3).

**2.2. Label elements**

Labelling according to Regulation (EC) No 1272/2008 [CLP/GHS]



GHS02



GHS04

**Signal word**

Danger

**Hazard statements for physical hazards**

H220	Extremely flammable gas.
H280	Contains gas under pressure; may explode if heated.

**Precautionary Statements****Prevention**

P210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking.

**Response**

P377 Leaking gas fire: Do not extinguish, unless leak can be stopped safely.  
P381 Eliminate all ignition sources if safe to do so.

**Storage**

P403 Store in a well-ventilated place.

**Hazardous ingredients for labeling**

ethane

**2.3. Other hazards****! Adverse physicochemical effects**

In the case of insufficient ventilation and/or through the formation of a explosive/highly flammable mixture is possible.

**! Adverse human health effects and symptoms**

Contact with liquid may cause cold burns/frostbite.  
Asphyxiant in high concentrations.

**! Information pertaining to special dangers for human and environment**

Gas/vapour heavier than air. May accumulate in confined spaces, particularly at or below ground level.

**SECTION 3: Composition/ information on ingredients****3.1. Substances**

CAS No 74-84-0	ethane
EC No 200-814-8	

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### 3.2. Mixtures

not applicable

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

Remove contaminated soaked clothing immediately.

Adhere to personal protective measures when giving first aid.

Seek medical advice immediately.

#### In case of inhalation

Remove the casualty into fresh air and keep him immobile.

Seek medical treatment immediately.

In case of respiratory standstill give artificial respiration by respiratory bag (Ambu bag) or respirator. Send for a doctor.

#### ! In case of skin contact

In case of contact with skin wash off with warm water.

In case of frostbite rinse with plenty of water. Don't remove clothing.

In case of frostbite spray with lukewarm (not hot) water for at least 15 minutes. Apply a sterile dressing. Obtain medical assistance.

#### In case of eye contact

Eye rinsing with water carefully while protecting unhurt eye.

Call for a doctor immediately.

#### In case of ingestion

Ingestion is not considered a potential route of exposure.

### 4.2. Most important symptoms and effects, both acute and delayed

#### ! Physician's information / possible symptoms

The following symptoms may occur in case of strong exposition:

Shortness of breath

Cardiopulmonary arrest.

Headache

Nausea

Confusion

Convulsions

Contact with liquid may cause cold burns/frostbite.

### 4.3. Indication of any immediate medical attention and special treatment needed

#### ! Treatment (Advice to doctor)

Treat symptoms.

Do not give any preparations of the adrenalin-ephedrine group.

Monitor circulation.

## SECTION 5: Firefighting measures

### 5.1. Extinguishing media

#### ! Suitable extinguishing media

Dry powder

Carbon dioxide

Water spray jet

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**C<sub>2</sub>H<sub>6</sub>****Unsuitable extinguishing media**

Full water jet

**5.2. Special hazards arising from the substance or mixture**

In case of fire formation of dangerous gases possible.

Formation of explosive gas mixtures in air.

In the event of fire the following can be released:

Carbon monoxide (CO)

**5.3. Advice for firefighters****Special protective equipment for fire-fighters**

Use breathing apparatus with independent air supply ( isolated ). Wear full protective clothing.

**! Additional information**

Cool endangered containers with water spray jet.

Exposure to fire may cause containers to rupture / explode.

Do not extinguish a leaking gas flame unless absolutely necessary. Spontaneous/explosive re-ignition may occur. Extinguish any other fire.

## SECTION 6: Accidental release measures

**6.1. Personal precautions, protective equipment and emergency procedures**

Ensure adequate ventilation.

See chapter 8.

Evacuate area.

Keep away sources of ignition.

**6.2. Environmental precautions**

If possible, stop flow of product.

Eliminate ignition sources.

Do not discharge into the drains/surface waters/groundwater.

Do not discharge into the subsoil/soil.

**6.3. Methods and material for containment and cleaning up**

Ensure adequate air ventilation. Allow to vaporise.

**6.4. Reference to other sections**

Informations for safe handling see chapter 7.

Informations for personal protective equipment see chapter 8.

## SECTION 7: Handling and storage

**7.1. Precautions for safe handling****! Advice on safe handling**

Use only in thoroughly ventilated areas.

Transfer and handle only in enclosed systems.

Take measures against electrostatically charging.

Barrels and installations thoroughly earthing (grounding ).

Use antistatic tools.

Treatment only in suitable rooms and systems.

Provide good room ventilation even at ground level (vapours are heavier than air).

Prevent cylinders from falling over.

Ensure valve protection device is correctly fitted.

Ensure valve outlet cap nut or plug (where provided) is correctly fitted.

Open valve slowly to avoid pressure shock.

Do not allow backfeed into the container.

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Suck back of water into the container must be prevented.  
No water to valves, flanges and other fittings.  
Purging of pipes and valves with inert gases - to avoid: water, solvents.

### ! General protective measures

Do not inhale gases.

### ! Hygiene measures

At work do not eat, drink and smoke.

### ! Advice on protection against fire and explosion

The product is combustible.  
Because of risk of explosion avoid vapours getting into cellar, sewage system and holes.  
Take precautionary measures against static discharges.  
Formation of explosive gas mixtures in air.  
Pay attention to general rules of internal fire prevention.  
Use explosion-proof equipment / fittings and non-sparking tools.

### 7.2. Conditions for safe storage, including any incompatibilities

#### Requirements for storage rooms and vessels

Keep in closed original container.  
Ventilate store-rooms thoroughly.  
Use transportable pressure equipment.  
Suitable materials: Normalised steel and carbon steel, tempered steel, aluminium alloys, stainless steel. Valve:  
Suitable materials: Brass, copper alloys, carbon steels, aluminium alloys, stainless steel.

### ! Advice on storage compatibility

Do not store with spontaneously flammable materials.  
Do not store together with combustible liquids or combustible solids.  
Do not store together with animal feedstuffs.  
Do not store together with explosives.  
Do not store together with infectious substances.  
Do not store together with radioactive material.  
Do not store together with toxic liquids or toxic solids.  
Do not store together with food.  
Do not store together with oxidizing liquids or oxidizing solids.

### ! Further information on storage conditions

Store closed container at cool and aired place.  
Prevent cylinders from falling over.  
Protect of heat.  
Storage temperature may not exceed 50°C (=122°F).

### 7.3. Specific end use(s)

#### ! Recommendation(s) for intended use

No further recommendations.

## SECTION 8: Exposure controls/personal protection

### 8.1. Control parameters

#### ! Ingredients with occupational exposure limits to be monitored

CAS No	Name	Code	[mg/m <sup>3</sup> ]	[ppm]	Remark
74-84-0	Aliphatic hydrocarbon gases: alkane [C1-C4]	TLV, 8 hours Short-term		1000 3000	ACGIH, USA

### 8.2. Exposure controls

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### ! Respiratory protection

Keep self contained breathing apparatus readily available for emergency use.

Do not use any filter apparatus.

In case of rescue and maintenance activities in storage containers use environment-independent breathing apparatus because of risk of suffocation by edging out of air oxygen

### ! Hand protection

Leather gloves

Protective gloves according to EN 374.

### ! Eye protection

Safety goggles, in case of increased risk add protective face shield Safety goggles with side protection according to EN 166.

### ! Skin protection

Safety shoes with steel toe.

Body covering work clothing, or chemical resistant suit at increased risk.

### ! Limitation and surveillance of the environment

See chapter 7.

## SECTION 9: Physical and chemical properties

### 9.1. Information on basic physical and chemical properties

#### Form

Gaseous / liquefied under pressure.

#### Colour

colourless

#### Odour

odourless

### ! Odour threshold

not applicable

### Important health, safety and environmental information

	Value	Temperature	at	Method	Remark
<b>pH value in delivery state</b>	not applicable				
<b>Acid number</b>	not applicable				
<b>boiling point</b>	-88,6 °C		1013 hPa		
<b>melting point</b>	-182,8 °C				
<b>Flash point</b>	-135 - -88,6 °C				

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	Value	Temperature	at	Method	Remark
<b>Flammable solid</b>	not applicable				
<b>Flammability (gas)</b>					Flammable.
<b>Ignition temperature</b>	515 °C			DIN 51794	
<b>Lower explosion limit</b>	2,4 Vol-%				
<b>Upper explosion limit</b>	14,7 Vol-%				
<b>Vapour pressure</b>	37800 hPa	20 °C			
<b>Relative density</b>	0,351 g/cm <sup>3</sup>	20 °C	37800 hPa		liquid phase
<b>Bulk density</b>	not applicable				
<b>Vapour density</b>	1,05				air = 1
<b>Solubility in water</b>	60,4 mg/l	25 °C			
<b>Solubility/other</b>					soluble in organic solvent
<b>Partition coefficient (log p<sub>OW</sub>)</b>	1,81				
<b>Viscosity dynamic</b>	0,042 mPa*s	20 °C			liquid phase

**! Oxidising properties**

no

**! Explosive properties**

no

**9.2. Other information**

Vapours are heavier than air.

### SECTION 10: Stability and reactivity

**10.1. Reactivity**

See section "Possibility of hazardous reactions".

**10.2. Chemical stability** Stable

under normal conditions.



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### 10.3. Possibility of hazardous reactions

Formation of explosive gas/air mixtures.  
Reactions with oxidising agents.

**10.4. Conditions to avoid** Formation of explosive gas/air mixtures.  
Heat sources / heat - risk of bursting.  
Sources of ignition.

### 10.5. Incompatible materials

#### ! Materials to avoid

Oxidising agent

### 10.6. Hazardous decomposition products

Hydrocarbons, gaseous  
Hydrocarbons aromatic hydrocarbon  
Hydrogen  
Methane

### Thermal decomposition

Remark                      No decomposition below 500 °C.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

#### Acute toxicity/Irritability/Sensitization

	Value/Validation	Species	Method	Remark
<b>LD50 acute oral</b>	not applicable			
<b>LD50 acute dermal</b>	not applicable			
<b>LC50 acute inhalation</b>	No data available			
<b>Irritability skin</b>	non-irritant			
<b>Irritability eye</b>	non-irritant			
<b>Skin sensitization</b>	not applicable			
<b>Sensitization respiratory system</b>	No data available			

#### Subacute Toxicity - Carcinogenicity

Value	Species	Method	Validation
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<b>Subchronic Toxicity</b>	NOAEC 19678 mg/m <sup>3</sup> (42 d) Inhalation	Rat (male / female)	OECD TG 422	No effects of toxicological significance.
<b>Mutagenicity</b>	No data available			
<b>Reproduction-Toxicity</b>	NOAEC 19678 mg/m <sup>3</sup>  Inhalation	Rat (male / female)	OECD TG 422	No indications of toxic effects were observed in reproduction studies in animals.
<b>Carcinogenicity</b>	No data available			
<b>! Specific target organ toxicity (single exposure)</b>	no			
<b>! Specific target organ toxicity (repeated exposure)</b>	no			
<b>! Aspiration hazard</b>	not applicable			
<b>! Toxicity test (Additional information)</b>	No indication of cancerogenic effects (conclusion by analogy).			
<b>Experiences made from practice</b>	May cause frostbite. Gases have a suffocating effect. Inhalation causes narcotic effect/intoxication.			

### SECTION 12: Ecological information

#### 12.1. Toxicity

##### Ecotoxicological effects

	Value	Species	Method	Validation
<b>Fish</b>	LC50 91,42 mg/l (96 h)	not determined	QSAR	The product was tested above its maximum solubility.
<b>Daphnia</b>	EC50 46,6 mg/l (48 h)	Daphnie	QSAR	
<b>Algae</b>	EC50 16,47 mg/l (96 h)	Alge	QSAR	
<b>Bacteria</b>	not applicable			

#### 12.2. Persistence and degradability

##### Physico-chemical degradability

At normal temperature very highly volatile or gaseous product that can be released to atmosphere.  
Elimination test cannot be employed.

##### Biological degradability

OECD

Readily biodegradable

#### 12.3. Bioaccumulative potential

Because of the n-octanol/water distribution coefficient (log K<sub>ow</sub>) accumulation in organisms is not expected.

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### 12.4. Mobility in soil

Adsorption in the soil is not likely.

### 12.5. Results of PBT and vPvB assessment

This substance does not meet the PBT/vPvB criteria of REACH, annex XIII.

### 12.6. Other adverse effects

ODP: 0

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### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

**Waste code No.**

16 05 04\*

**Name of waste**

gases in pressure containers (including halons) containing dangerous substances

Wastes marked with an asterisk are considered to be hazardous waste pursuant to Directive 91/689/EEC on hazardous waste.

**! Recommendations for the product**

Dispose of as hazardous waste.

Incinerate in suitable incineration plant, but care for official regulations.

**Recommendations for packaging**

Transportable pressure equipment (empty, residual pressure): Return to supplier / manufacturer.

### SECTION 14: Transport information

**Land and inland navigation transport ADR/RID**

UN 1035 ETHANE, 2.1, (B/D), Classification code: 2F

**Marine transport IMDG**

UN 1035 ETHANE, 2.1

Ems: F-D, S-U

**Air transport ICAO/IATA-DGR**

UN 1035 Ethane, 2.1 Cargo

aircraft only.

Cargo aircraft only: Package max. 150 kg.

**Special precautions for user**

The protective measures listed in Sections 6, 7 and 8 of the Safety Data Sheet have to be considered.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

not applicable

No transport as bulk according IBC - Code.

### SECTION 15: Regulatory information

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

**! Other regulations (EU)**

Regulation (EC) No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Annex XVII No 40.

Directive 96/82/EC on the control of major-accident hazards involving dangerous substances.

**VOC standard**

**VOC content**

>=99 % 20 °C 37800 hPa

**15.2. Chemical Safety Assessment**

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The protective measures listed in Sections 6, 7 and 8 of the Safety Data Sheet have to be considered. For this substance a chemical safety assessment has been carried out. An exposure scenario is not required.

### SECTION 16: Other information

#### Recommended uses and restrictions

National and local regulations concerning chemicals shall be observed.

#### ! Further information

All declarations of safety-data-sheet refer to pure substance.

The information contained herein is based on the state of our knowledge. It characterizes the product with regard to the appropriate safety precautions. It does not represent a guarantee of the properties of the product. Indication of changes: "!" = Data changed compared with the previous version.

#### Wording of the R/H-phrases specified in chapter 3 (not the classification of the mixture!)

R 12 Extremely flammable.

H220 Extremely flammable gas.

H280 Contains gas under pressure; may explode if heated.