SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Mixture identification: Monomethylamine in ethanol 33%

UFI: USE2-EQCQ-720M-Y7J5

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended use:

Solvent of a basic nature

1.3. Details of the supplier of the safety data sheet

Company:

Gases: Research Innovation & Technology SLU.

C/ Consell de Cent, 419 Principal 1 y 2 - 08009 (Barcelona)

Tel: 93/272.14.00 Fax: 93/215.38.08

Competent person responsible for the safety data sheet:

gmartin@grit.es

1.4. Emergency telephone number

+ 34 630 215 910 (24h)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

EC regulation criteria 1272/2008 (CLP)

Danger, Flam. Liq. 2, Highly flammable liquid and vapour.

Warning, Skin Irrit. 2, Causes skin irritation.

Danger, Eye Dam. 1, Causes serious eye damage.

Warning, STOT SE 3, May cause respiratory irritation.

Adverse physicochemical, human health and environmental effects:

No other hazards

2.2. Label elements

Hazard pictograms:

Danger

Hazard statements:

H225 Highly flammable liquid and vapour.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.

Precautionary statements:

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233 Keep container tightly closed.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 Immediately call a POISON CENTER.
P370+P378 In case of fire, use a dry powder fire extinguisher to extinguish.
P403+P235 Store in a well-ventilated place. Keep cool.

Special Provisions:

None

Contains

mono-methylamine

Special provisions according to Annex XVII of REACH and subsequent amendments:

None

2.3. Other hazards

vPvB Substances: None - PBT Substances: None

Other Hazards:

No other hazards

SECTION 3: Composition/information on ingredients

3.1. Substances

N.A.

3.2. Mixtures

Hazardous components within the meaning of the CLP regulation and related classification:

Qty	Name	Ident. Number	Classification
>= 65%	ethanol; ethyl alcohol	Index number: 603-002-00-5 CAS: 64-17-5 EC: 200-578-6 REACH No.: 01-2119457610-43	2.6/2 Flam. Liq. 2 H225
<= 35%	mono-methylamine	Index number: 612-001-00-9 CAS: 74-89-5 EC: 200-820-0 REACH No.: 01-2119475496-25	2.2/1A Flam. Gas 1A H220 2.5 Press. Gas H280 3.2/2 Skin Irrit. 2 H315 3.3/1 Eye Dam. 1 H318 3.1/4/Inhal Acute Tox. 4 H332 3.8/3 STOT SE 3 H335 Eye Dam. 1; H318: C⩾5% Eye Irrit. 2; H319: 0,5 %⩽C<5 % STOT SE 3; H335: C⩾5% Skin Irrit. 2; H315: C⩾5%

SECTION 4: First aid measures

4.1. Description of first aid measures

In case of skin contact:

Immediately take off all contaminated clothing.
Areas of the body that have - or are only even suspected of having - come into contact with the product must be rinsed immediately with plenty of running water and possibly with soap.
OBTAIN IMMEDIATE MEDICAL ATTENTION.
Wash thoroughly the body (shower or bath).
Remove contaminated clothing immediately and dispose off safely.
After contact with skin, wash immediately with soap and plenty of water.

In case of eyes contact:

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an opthalmologist immediately.
Protect uninjured eye.

In case of Ingestion:

Do not under any circumstances induce vomiting. OBTAIN A MEDICAL EXAMINATION IMMEDIATELY.

In case of Inhalation:

In case of inhalation, consult a doctor immediately and show him packing or label.

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

None

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

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).
Treatment: Treat symptomatically.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media:
In case of fire, use a dry powder fire extinguisher to extinguish.
Extinguishing media which must not be used for safety reasons:
DO NOT use a direct water jet to extinguish.

5.2. Special hazards arising from the substance or mixture

Do not inhale explosion and combustion gases.
Burning produces heavy smoke.

5.3. Advice for firefighters

Use suitable breathing apparatus .
Collect contaminated fire extinguishing water separately. This must not be discharged into drains.
Move undamaged containers from immediate hazard area if it can be done safely.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear personal protection equipment.
Remove all sources of ignition.
Wear breathing apparatus if exposed to vapours/dusts/aerosols.
Provide adequate ventilation.
Use appropriate respiratory protection.
See protective measures under point 7 and 8.

6.2. Environmental precautions

Do not allow to enter into soil/subsoil. Do not allow to enter into surface water or drains.
Retain contaminated washing water and dispose it.
In case of gas escape or of entry into waterways, soil or drains, inform the responsible authorities.
Suitable material for taking up: absorbing material, organic, sand

6.3. Methods and material for containment and cleaning up

Wash with plenty of water.

6.4. Reference to other sections

See also section 8 and 13

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Avoid contact with skin and eyes, inhalation of vapours and mists.
Use localized ventilation system.
Don't use empty container before they have been cleaned.
Before making transfer operations, assure that there aren't any incompatible material residuals in the containers.
See also section 8 for recommended protective equipment.
Advice on general occupational hygiene:
Contamined clothing should be changed before entering eating areas.
Do not eat or drink while working.

7.2. Conditions for safe storage, including any incompatibilities

Always keep in a well ventilated place.
Keep away from unguarded flame, sparks, and heat sources. Avoid direct exposure to sunlight.
Keep away from food, drink and feed.
Incompatible materials:
None in particular.
Instructions as regards storage premises:
Cool and adequately ventilated.

7.3. Specific end use(s)

None in particular

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

ethanol; ethyl alcohol - CAS: 64-17-5
ACGIH - STEL: 1000 ppm - Notes: A3 - URT irr
MAK - TWA: 960 mg/m3, 500 ppm
mono-methylamine - CAS: 74-89-5
ACGIH - TWA(8h): 5 ppm - STEL: 15 ppm - Notes: Eye, skin, and URT irr

DNEL Exposure Limit Values

ethanol; ethyl alcohol - CAS: 64-17-5
Worker Professional: 950 mg/m3 - Consumer: 114 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects
Worker Professional: 343 mg/kg bw/day - Consumer: 206 mg/kg bw/day - Exposure: Human Dermal - Frequency: Long Term, systemic effects
Worker Professional: 1900 mg/m3 - Consumer: 950 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, local effects
Consumer: 87 mg/kg bw/day - Exposure: Human Oral - Frequency: Long Term, systemic effects
mono-methylamine - CAS: 74-89-5
Worker Professional: 0.58 mg/kg bw/day - Exposure: Human Dermal - Frequency: Short Term, systemic effects
Worker Professional: 0.417 mg/kg - Exposure: Human Dermal - Frequency: Long Term, systemic effects

Worker Professional: 27.7 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, systemic effects
Worker Professional: 20.21 mg/m3 - Exposure: Human Inhalation - Frequency: Short Term, local effects
Worker Professional: 0.9 mg/m3 - Exposure: Human Inhalation - Frequency: Long Term, systemic effects

PNEC Exposure Limit Values

ethanol; ethyl alcohol - CAS: 64-17-5

Target: Fresh Water - Value: 0.96 mg/l
Target: Marine water - Value: 0.79 mg/l
Target: Intermittent / sporadic - Value: 2.75 mg/l
Target: Plant wastewater treatment - Value: 580 mg/l
Target: Freshwater sediments - Value: 3.6 mg/kg dw

mono-methylamine - CAS: 74-89-5

Target: Plant wastewater treatment - Value: 0.1263 mg/l
Target: Fresh Water - Value: 0.016 mg/l
Target: Marine water - Value: 0.0016 mg/l
Target: Freshwater sediments - Value: 0.016 mg/kg dw
Target: Marine water sediments - Value: 0.0016 mg/kg dw
Target: Soil (agricultural) - Value: 0.0069 mg/kg dw

8.2. Exposure controls

Eye protection:

Eye glasses with side protection.

Protection for skin:

Use clothing that provides comprehensive protection to the skin, e.g. cotton, rubber, PVC or viton.

Protection for hands:

Rubber nitrilo: thickness> 0.45 mm Time of perforation> 480 min (EN 374)

Respiratory protection:

Gas filtering device (DIN EN 141).

Thermal Hazards:

None

Environmental exposure controls:

None

Appropriate engineering controls:

None

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Properties	Value	Method:	Notes:
Appearance and colour:	Transparent	--	--
Odour:	Characteristic (Disgusting)	--	--
Odour threshold:	N.A.	--	--
pH:	N.A.	--	--
Melting point / freezing point:	N.A.	--	--
Boiling point:	78 ºC (Ethanol)	--	--
Flash point:	-22.8 ° C	--	--
Evaporation rate:	N.A.	--	--
Solid/gas flammability:	N.A.	--	--
Upper/lower flammability or explosive limits:	N.A.	--	--
Vapour pressure:	N.A.	--	--
Vapour density:	N.A.	--	--
Relative density:	0,756 gcm3	--	--
Solubility in water:	N.A.	--	--
Solubility in oil:	N.A.	--	--
Partition coefficient (n-octanol/water):	N.A.	--	--
Auto-ignition temperature:	363 ºC (Ethanol)	--	--
Decomposition temperature:	N.A.	--	--
Viscosity:	N.A.	--	--
Explosive properties:	N.A.	--	--
Oxidizing properties:	N.A.	--	--

9.2. Other information

Properties	Value	Method:	Notes:
Miscibility:	N.A.	--	--
Fat Solubility:	N.A.	--	--
Conductivity:	N.A.	--	--
Substance Groups relevant properties	N.A.	--	--

SECTION 10: Stability and reactivity

10.1. Reactivity
Stable under normal conditions
10.2. Chemical stability
Stable under normal conditions
10.3. Possibility of hazardous reactions
Contact with strong bases or alkaline materials may cause violent reactions or explosions.
10.4. Conditions to avoid
Extremely high or extremely low temperatures. Direct sunlight.
10.5. Incompatible materials
Oxidizers, Alkali metals, Ammonia, Acid chlorides, Acid anhydrides, Peroxides, Acids, Chloroformates, Phosphorous halides
10.6. Hazardous decomposition products
COx, NOx

SECTION 11: Toxicological information

11.1. Information on toxicological effects
Toxicological information of the product:
Monomethylamine in ethanol 33%
a) acute toxicity
Not classified
Based on available data, the classification criteria are not met
b) skin corrosion/irritation
The product is classified: Skin Irrit. 2 H315
c) serious eye damage/irritation
The product is classified: Eye Dam. 1 H318
d) respiratory or skin sensitisation
Not classified
Based on available data, the classification criteria are not met
e) germ cell mutagenicity
Not classified
Based on available data, the classification criteria are not met
f) carcinogenicity
Not classified
Based on available data, the classification criteria are not met
g) reproductive toxicity
Not classified
Based on available data, the classification criteria are not met
h) STOT-single exposure
The product is classified: STOT SE 3 H335
i) STOT-repeated exposure
Not classified
Based on available data, the classification criteria are not met
j) aspiration hazard
Not classified
Based on available data, the classification criteria are not met
Toxicological information of the main substances found in the product:
ethanol; ethyl alcohol - CAS: 64-17-5
a) acute toxicity:
Test: LD50 - Route: Oral - Species: Rat 10470 mg/kg
Test: LD50 - Route: Skin - Species: Rabbit 15800 mg/Kg bw
h) STOT-single exposure:
Test: NOAEL 1730 mg/kg d
mono-methylamine - CAS: 74-89-5
a) acute toxicity:
Test: LC50 - Route: Inhalation - Species: Rat 3555 ppm - Duration: 4h - Notes: OECD 403

Test: NOAEL - Route: Inhalation - Species: Rat 75 ppm - Source: 6h/d 5d/w - Notes: OECD 412

b) skin corrosion/irritation:

Test: Skin Irritant - Route: Skin - Species: Rabbit Positive - Notes: Aquous solution

c) serious eye damage/irritation:

Test: Eye Irritant - Route: Eyes - Species: Rabbit Positive

e) germ cell mutagenicity:

Test: NOAEL - Route: Invitro - Species: Mouse 0-5 mmol/l - Duration: 4h - Notes: oecd 476

g) reproductive toxicity:

Test: LOAEL - Route: Oral - Species: Rat 5 mg/kg - Notes: No indication of toxic effects were observerd in reproduction studies in animals

SECTION 12: Ecological information

12.1. Toxicity

Adopt good working practices, so that the product is not released into the environment.
<VAR,1,0,1300>

Monomethylamine in ethanol 33%

Not classified for environmental hazards

Based on available data, the classification criteria are not met

ethanol; ethyl alcohol - CAS: 64-17-5

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish 14200 mg/l - Duration h: 96 - Notes: OECD 203
Endpoint: EC50 - Species: Daphnia 5012 mg/l - Duration h: 48 - Notes: OECD 202
Endpoint: EC50 - Species: Algae 275 mg/l - Duration h: 72 - Notes: OECD 201

mono-methylamine - CAS: 74-89-5

a) Aquatic acute toxicity:

Endpoint: LC50 - Species: Fish 16 mg/l - Duration h: 48 - Notes: OECD 203
Endpoint: EC50 - Species: Daphnia 163 mg/l - Duration h: 48 - Notes: DIN 38412
Endpoint: EC20 - Species: Algae 31 mg/l - Duration h: 1
Endpoint: EC20 - Species: Bacteria 240 mg/l - Duration h: 0.5 - Notes: ISO 8192 Oxygen consumption

12.2. Persistence and degradability

None

ethanol; ethyl alcohol - CAS: 64-17-5

Biodegradability: Readily biodegradable - Duration: 28 days - %: 60

mono-methylamine - CAS: 74-89-5

Biodegradability: Readily biodegradable - Test: OECD 301C - Duration: 14 d - %: 84

12.3. Bioaccumulative potential

ethanol; ethyl alcohol - CAS: 64-17-5

Bioaccumulation: Not bioaccumulative - Test: Kow - Partition coefficient -0.310
Bioaccumulation: Not bioaccumulative - Test: BCF - Bioconcentrantion factor 3.2 - Notes: Calculated

mono-methylamine - CAS: 74-89-5

Bioaccumulation: Not bioaccumulative - Test: Pow- Log -0.713

12.4. Mobility in soil

mono-methylamine - CAS: 74-89-5

Mobility in soil: Mobile

12.5. Results of PBT and vPvB assessment

vPvB Substances: None - PBT Substances: None

12.6. Other adverse effects

None

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Recover, if possible. Send to authorised disposal plants or for incineration under controlled conditions.
In so doing, comply with the local and national regulations currently in force.

SECTION 14: Transport information

14.1. UN number

ADR-UN Number:	1993
IATA-UN Number:	1993
IMDG-UN Number:	1993

14.2. UN proper shipping name

ADR-Shipping Name:	FLAMMABLE LIQUID, N.O.S. (ethanol; ethyl alcohol; mono-methylamine)
IATA-Shipping Name:	FLAMMABLE LIQUID, N.O.S. (ethanol; ethyl alcohol; mono-methylamine)
IMDG-Shipping Name:	FLAMMABLE LIQUID, N.O.S. (ethanol; ethyl alcohol; mono-methylamine)

14.3. Transport hazard class(es)

ADR-Class:	3
ADR - Hazard identification number:	33
IATA-Class:	3
IATA-Label:	3
IMDG-Class:	3

14.4. Packing group

ADR-Packing Group:	II
IATA-Packing group:	II
IMDG-Packing group:	II

14.5. Environmental hazards

ADR-Enviromental Pollutant:	No
IMDG-Marine pollutant:	No

14.6. Special precautions for user

ADR-Subsidiary hazards:	-
ADR-S.P.:	274 601 640C
ADR-Transport category (Tunnel restriction code):	2 (D/E)
IATA-Passenger Aircraft:	353
IATA-Subsidiary hazards:	-
IATA-Cargo Aircraft:	364
IATA-S.P.:	A3
IATA-ERG:	3H
IMDG-EmS:	F-E , S-E
IMDG-Subsidiary hazards:	-
IMDG-Stowage and handling:	Category B
IMDG-Segregation:	-

14.7. Transport in bulk according to Annex II of Marpol and the IBC Code

N.A.

SECTION 15: Regulatory information

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

Dir. 98/24/EC (Risks related to chemical agents at work)
Dir. 2000/39/EC (Occupational exposure limit values)
Regulation (EC) n. 1907/2006 (REACH)
Regulation (EC) n. 1272/2008 (CLP)
Regulation (EC) n. 790/2009 (ATP 1 CLP) and (EU) n. 758/2013
Regulation (EU) n. 2015/830
Regulation (EU) n. 286/2011 (ATP 2 CLP)
Regulation (EU) n. 618/2012 (ATP 3 CLP)
Regulation (EU) n. 487/2013 (ATP 4 CLP)
Regulation (EU) n. 944/2013 (ATP 5 CLP)
Regulation (EU) n. 605/2014 (ATP 6 CLP)
Regulation (EU) n. 2015/1221 (ATP 7 CLP)
Regulation (EU) n. 2016/918 (ATP 8 CLP)
Regulation (EU) n. 2016/1179 (ATP 9 CLP)
Regulation (EU) n. 2017/776 (ATP 10 CLP)
Regulation (EU) n. 2018/669 (ATP 11 CLP)
Regulation (EU) n. 2018/1480 (ATP 13 CLP)
Regulation (EU) n. 2019/521 (ATP 12 CLP)

Restrictions related to the product or the substances contained according to Annex XVII Regulation (EC) 1907/2006 (REACH) and subsequent modifications:

Restrictions related to the product:

Restriction 3

Restriction 40

Restrictions related to the substances contained:

No restriction.

Where applicable, refer to the following regulatory provisions :

Directive 2012/18/EU (Seveso III)
Regulation (EC) nr 648/2004 (detergents).
Dir. 2004/42/EC (VOC directive)

Provisions related to directive EU 2012/18 (Seveso III):

Seveso III category according to Annex 1, part 1

Product belongs to category: P5c

15.2. Chemical safety assessment

No Chemical Safety Assessment has been carried out for the mixture.

SECTION 16: Other information

Full text of phrases referred to in Section 3:

H225 Highly flammable liquid and vapour.
H220 Extremely flammable gas.
H280 Contains gas under pressure; may explode if heated.
H335 May cause respiratory irritation.
H315 Causes skin irritation.
H318 Causes serious eye damage.
H332 Harmful if inhaled.
H319 Causes serious eye irritation.

Hazard class and hazard category	Code	Description
Flam. Gas 1A	2.2/1A	Flammable gas, Category 1A
Press. Gas	2.5	Gases under pressure
Flam. Liq. 2	2.6/2	Flammable liquid, Category 2
Acute Tox. 4	3.1/4/Inhal	Acute toxicity (inhalation), Category 4
Skin Irrit. 2	3.2/2	Skin irritation, Category 2
Eye Dam. 1	3.3/1	Serious eye damage, Category 1
Eye Irrit. 2	3.3/2	Eye irritation, Category 2
STOT SE 3	3.8/3	Specific target organ toxicity - single exposure, Category 3

This safety data sheet has been completely updated in compliance to Regulation 2015/830.
Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]:

Classification according to Regulation (EC) Nr. 1272/2008	Classification procedure
Flam. Liq. 2, H225	On basis of test data
Skin Irrit. 2, H315	Calculation method
Eye Dam. 1, H318	Calculation method
STOT SE 3, H335	Calculation method

Paragraphs modified since the previous revision:

SECTION 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

This document was prepared by a competent person who has received appropriate training.
Main bibliographic sources:

ECDIN - Environmental Chemicals Data and Information Network - Joint Research Centre, Commission of the European Communities
SAX's DANGEROUS PROPERTIES OF INDUSTRIAL MATERIALS - Eight Edition - Van Nostrand Reinold

The information contained herein is based on our state of knowledge at the above-specified date. It refers solely to the product indicated and constitutes no guarantee of particular quality.
It is the duty of the user to ensure that this information is appropriate and complete with respect to the specific use intended.
This MSDS cancels and replaces any preceding release.

ADR:	European Agreement concerning the International Carriage of Dangerous Goods by Road.
ATE:	Acute Toxicity Estimate
ATEmix:	Acute toxicity Estimate (Mixtures)
CAS:	Chemical Abstracts Service (division of the American Chemical Society).
CLP:	Classification, Labeling, Packaging.
DNEL:	Derived No Effect Level.
EINECS:	European Inventory of Existing Commercial Chemical Substances.
GefStoffVO:	Ordinance on Hazardous Substances, Germany.
GHS:	Globally Harmonized System of Classification and Labeling of Chemicals.
IATA:	International Air Transport Association.
IATA-DGR:	Dangerous Goods Regulation by the "International Air Transport Association" (IATA).
ICAO:	International Civil Aviation Organization.
ICAO-TI:	Technical Instructions by the "International Civil Aviation Organization" (ICAO).
IMDG:	International Maritime Code for Dangerous Goods.
INCI:	International Nomenclature of Cosmetic Ingredients.
KSt:	Explosion coefficient.
LC50:	Lethal concentration, for 50 percent of test population.
LD50:	Lethal dose, for 50 percent of test population.
PNEC:	Predicted No Effect Concentration.
RID:	Regulation Concerning the International Transport of Dangerous Goods by Rail.
STEL:	Short Term Exposure limit.
STOT:	Specific Target Organ Toxicity.
TLV:	Threshold Limiting Value.
TWA:	Time-weighted average
WGK:	German Water Hazard Class.