



Safety Data Sheet

acc. to 29 CFR 1910.1200 App D

A/C Pro Super Seal A/C Treatment Formulated for all R-134a Systems

Version number: 5.0
Replaces version of: 2020-09-23 (4)

Revision: 2020-10-21

SECTION 1: Identification

1.1 Product identifier

Trade name

A/C Pro Super Seal A/C Treatment Formulated for all R-134a Systems

Alternative number(s)

048168453146

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

Relevant identified uses

General use

1.3 Details of the supplier of the safety data sheet

Energizer Manufacturing, Inc.
25225 Detroit Rd.
Westlake OH 44145
United States

Telephone: 800-383-7323; 314-985-2000 (USA / CANADA)
Website: <http://data.energizer.com>

Energizer Trading Ltd.
Sword House, Totteridge Road, High Wycombe, HP13 6DG, UK

Telephone: +44(0)8000353376
e-mail: ConsumerServiceEU@energizer.com

1.4 Emergency telephone number

Emergency information service

1-314-985-1511 Int'l: 1-800-526-4727
This number is only available during the following
office hours: Mon-Fri 09:00 AM - 05:00 PM

SECTION 2: Hazard(s) identification

2.1 Classification of the substance or mixture

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Section	Hazard class	Category	Hazard class and category	Hazard statement
A.1I	acute toxicity (inhal.)	4	Acute Tox. 4	H332
A.4R	respiratory sensitization	1	Resp. Sens. 1	H334
A.4S	skin sensitization	1	Skin Sens. 1	H317
B.6	flammable liquid	3	Flam. Liq. 3	H226

For full text of abbreviations: see SECTION 16.

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The most important adverse physicochemical, human health and environmental effects

The product is combustible and can be ignited by potential ignition sources.

2.2 Label elements

Labelling acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

- Signal word danger

- Pictograms

GHS02, GHS07, GHS08



- Hazard statements

H226	Flammable liquid and vapor.
H317	May cause an allergic skin reaction.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.

- Precautionary statements

P101	If medical advice is needed, have product container or label at hand.
P102	Keep out of reach of children.
P103	Read label before use.
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.
P261	Avoid breathing dust/fume/gas/mist/vapors/spray.
P271	Use only outdoors or in a well-ventilated area.
P272	Contaminated work clothing must not be allowed out of the workplace.
P280	Wear protective gloves/eye protection/face protection.
P285	In case of inadequate ventilation wear respiratory protection.
P302+P352	If on skin: Wash with plenty of water.
P303+P361+P353	If on skin (or hair): 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.
P312	Call a poison center/doctor if you feel unwell.
P321	Specific treatment (see on this label).
P342+P311	If experiencing respiratory symptoms: Call a poison center/doctor.
P363	Wash contaminated clothing before reuse.
P370+P378	In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.
P403+P235	Store in a well-ventilated place. Keep cool.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

2.2.1.7- Hazardous ingredients for labelling

ethylenediamine, Dimethyl adipate, methanol

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2.3 Other hazards

Hazards not otherwise classified

Contains ethylenediamine. May produce an allergic reaction.
May be harmful in contact with skin (GHS category 5: acutely toxic - dermal).
Harmful to aquatic life (GHS category 3: aquatic toxicity - acute).

Results of PBT and vPvB assessment

This mixture does not contain any substances that are assessed to be a PBT or a vPvB.














SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
Vinylsilane derivative	CAS No trade secret	10 – < 25	Acute Tox. 4 / H332 Flam. Liq. 3 / H226	 
Ethanediamine derivative	CAS No trade secret 1760-24-3	10 – < 25	Acute Tox. 4 / H332	
Dimethyl adipate	CAS No Trade secret	5 – < 10	Acute Tox. 4 / H312	
Methoxysilane derivative	CAS No trade secret	5 – < 10	Flam. Liq. 2 / H225	
methanol	CAS No 67-56-1	< 1	Acute Tox. 3 / H301 Acute Tox. 3 / H311 Acute Tox. 3 / H331 STOT SE 1 / H370 Flam. Liq. 2 / H225	  
ethylenediamine	CAS No trade secret	< 1	Acute Tox. 4 / H302 Acute Tox. 3 / H311 Acute Tox. 4 / H332 Skin Corr. 1B / H314 Eye Dam. 1 / H318 Resp. Sens. 1 / H334 Skin Sens. 1 / H317 Flam. Liq. 3 / H226	    

For full text of abbreviations: see SECTION 16.



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SECTION 4: First-aid measures

4.1 Description of first- aid measures

General notes

Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Following inhalation

If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Following skin contact

Wash with plenty of soap and water.

Following eye contact

Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

Following ingestion

Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms and effects are not known to date.

4.3 Indication of any immediate medical attention and special treatment needed

none

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water spray, BC-powder, Carbon dioxide (CO₂)

Unsuitable extinguishing media

Water jet

5.2 Special hazards arising from the substance or mixture

In case of insufficient ventilation and/or in use, may form flammable/explosive vapor-air mixture. Solvent vapors are heavier than air and may spread along floors. Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.

Hazardous combustion products

Nitrogen oxides (NO_x), Carbon monoxide (CO), Carbon dioxide (CO₂)

5.3 Advice for firefighters

In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.



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SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

For non-emergency personnel

Remove persons to safety.

For emergency responders

Wear breathing apparatus if exposed to vapors/dust/aerosols/gases.

6.2 Environmental precautions

Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.

6.3 Methods and material for containment and cleaning up

Advice on how to contain a spill

Covering of drains

Advice on how to clean up a spill

Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselgur (diatomite), sand, universal binder

Appropriate containment techniques

Use of adsorbent materials.

Other information relating to spills and releases

Place in appropriate containers for disposal. Ventilate affected area.

6.4 Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation

Use local and general ventilation. Avoidance of ignition sources. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only in well-ventilated areas. Due to danger of explosion, prevent leakage of vapours into cellars, flues and ditches. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.

- Specific notes/details

Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapors are heavier than air, spread along floors and form explosive mixtures with air. Vapors may form explosive mixtures with air.



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Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feedingstuffs.

7.2 Conditions for safe storage, including any incompatibilities

Managing of associated risks

- Explosive atmospheres

Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.

- Flammability hazards

Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

- Ventilation requirements

Keep any substance that emits harmful vapors or gases in a place that allows these to be permanently extracted. Use local and general ventilation. Ground/bond container and receiving equipment.

- Packaging compatibilities

Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used.

7.3 Specific end use(s)

See section 16 for a general overview.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling-C [ppm]	Ceiling-C [mg/m ³]	Notation	Source
US	ethylenediamine	107-15-3	REL	10 (10 h)	25 (10 h)						NIOSH REL
US	ethylenediamine	107-15-3	TLV®	10							AC-GIH® 2019
US	ethylenediamine	107-15-3	PEL	10	25						29 CFR 1910.1000
US	ethylenediamine (1,2-diaminoethane)	107-15-3	PEL (CA)	10	25						Cal/OSHA PEL



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Occupational exposure limit values (Workplace Exposure Limits)

Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling-C [ppm]	Ceiling-C [mg/m ³]	Notation	Source
US	methanol	67-56-1	TLV®	200		250					ACGIH® 2019
US	methyl alcohol	67-56-1	REL	200 (10 h)	260 (10 h)	250	325				NIOSH REL
US	methyl alcohol	67-56-1	PEL	200	260						29 CFR 1910.1000
US	methyl alcohol (methanol)	67-56-1	PEL (CA)	200	260	250	325	1,000			Cal/OSHA PEL

Notation

Ceiling-C

STEL

TWA

ceiling value is a limit value above which exposure should not occur
short-term exposure limit: a limit value above which exposure should not occur and which is related to a 15-minute period (unless otherwise specified)
time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-weighted average (unless otherwise specified)

Biological limit values

Country	Name of agent	Parameter	Notation	Identifier	Value	Source
US	methanol	methanol		BEI®	15 mg/l	ACGIH® 2019

Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
Dimethyl adipate	Trade secret	DNEL	8.3 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
Dimethyl adipate	Trade secret	DNEL	8.3 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
methanol	67-56-1	DNEL	130 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
methanol	67-56-1	DNEL	130 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects



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Relevant DNELs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Protection goal, route of exposure	Used in	Exposure time
methanol	67-56-1	DNEL	130 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
methanol	67-56-1	DNEL	130 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
methanol	67-56-1	DNEL	20 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects
methanol	67-56-1	DNEL	20 mg/kg bw/day	human, dermal	worker (industry)	acute - systemic effects
ethylenediamine	trade secret	DNEL	25 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects
ethylenediamine	trade secret	DNEL	3.6 mg/kg bw/day	human, dermal	worker (industry)	chronic - systemic effects

Relevant PNECs of components of the mixture

Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
Dimethyl adipate	Trade secret	PNEC	0.18 mg/l	aquatic organisms	water	intermittent release
Dimethyl adipate	Trade secret	PNEC	0.018 mg/l	aquatic organisms	freshwater	short-term (single instance)
Dimethyl adipate	Trade secret	PNEC	0.002 mg/l	aquatic organisms	marine water	short-term (single instance)
Dimethyl adipate	Trade secret	PNEC	10 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
Dimethyl adipate	Trade secret	PNEC	0.16 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
Dimethyl adipate	Trade secret	PNEC	0.016 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
Dimethyl adipate	Trade secret	PNEC	0.09 mg/kg	terrestrial organisms	soil	short-term (single instance)
methanol	67-56-1	PNEC	20.8 mg/l	aquatic organisms	freshwater	short-term (single instance)
methanol	67-56-1	PNEC	2.08 mg/l	aquatic organisms	marine water	short-term (single instance)
methanol	67-56-1	PNEC	100 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)

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Relevant PNECs of components of the mixture						
Name of substance	CAS No	End-point	Threshold level	Organism	Environmental compartment	Exposure time
methanol	67-56-1	PNEC	77 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
methanol	67-56-1	PNEC	7.7 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
methanol	67-56-1	PNEC	100 mg/kg	terrestrial organisms	soil	short-term (single instance)
ethylenediamine	trade secret	PNEC	0.016 mg/l	aquatic organisms	freshwater	short-term (single instance)
ethylenediamine	trade secret	PNEC	0.002 mg/l	aquatic organisms	marine water	short-term (single instance)
ethylenediamine	trade secret	PNEC	0.5 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
ethylenediamine	trade secret	PNEC	7.68 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
ethylenediamine	trade secret	PNEC	0.768 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
ethylenediamine	trade secret	PNEC	4.36 mg/kg	terrestrial organisms	soil	short-term (single instance)

8.2 Exposure controls

Appropriate engineering controls

General ventilation.

Individual protection measures (personal protective equipment)

Eye/face protection

Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.



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Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	liquid
Color	various
Odor	characteristic

Other safety parameters

pH (value)	not determined
Melting point/freezing point	not determined
Initial boiling point and boiling range	102 °C at 1,013 hPa
Flash point	23 °C
Evaporation rate	not determined
Flammability (solid, gas)	not relevant, (fluid)

Explosive limits

- Lower explosion limit (LEL)	1.42 vol%
- Upper explosion limit (UEL)	22.7 vol%
Vapor pressure	2,990 Pa at 20 °C
Density	not determined
Vapor density	this information is not available
Relative density	information on this property is not available
Solubility(ies)	not determined



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Partition coefficient

- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	224 °C
Viscosity	not determined
Explosive properties	none
Oxidizing properties	none

9.2 Other information

Temperature class (USA, acc. to NEC 500)	T2D (maximum permissible surface temperature on the equipment: 215°C)
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SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". The mixture contains reactive substance(s). Risk of ignition.

If heated:

Risk of ignition

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

Hints to prevent fire or explosion

Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge.

10.5 Incompatible materials

Oxidizers

10.6 Hazardous decomposition products

Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.



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SECTION 11: Toxicological information

11.1 Information on toxicological effects

Test data are not available for the complete mixture.

Classification procedure

The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification acc. to OSHA "Hazard Communication Standard" (29 CFR 1910.1200)

Acute toxicity

Harmful if inhaled.

GHS of the United Nations, annex 4: May be harmful in contact with skin.

- Acute toxicity estimate (ATE)

Inhalation: gas 11,344 ppm_V/4h

Acute toxicity estimate (ATE) of components of the mixture

Name of substance	CAS No	Exposure route	ATE
Vinylsilane derivative	trade secret	inhalation: gas	2,773 ppm _V /4h
Vinylsilane derivative	trade secret	inhalation: vapor	11 mg _I /4h
Ethanediamine derivative	trade secret 1760-24-3	inhalation: vapor	11 mg _I /4h
Ethanediamine derivative	trade secret 1760-24-3	inhalation: dust/mist	1.49 mg _I /4h
Dimethyl adipate	Trade secret	dermal	1,000 mg _I /kg
methanol	67-56-1	oral	100 mg _I /kg
methanol	67-56-1	dermal	300 mg _I /kg
methanol	67-56-1	inhalation: vapor	3 mg _I /4h
ethylenediamine	trade secret	oral	866 mg _I /kg
ethylenediamine	trade secret	dermal	560 mg _I /kg
ethylenediamine	trade secret	inhalation: vapor	14.7 mg _I /4h

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.



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Respiratory or skin sensitization

May cause allergy or asthma symptoms or breathing difficulties if inhaled. May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity - single exposure

Shall not be classified as a specific target organ toxicant (single exposure).

Specific target organ toxicity - repeated exposure

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

SECTION 12: Ecological information

12.1 Toxicity

Harmful to aquatic life.

Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
Vinylsilane derivative	trade secret	LC50	191 mg/l	fish	96 h
Vinylsilane derivative	trade secret	EC50	168.7 mg/l	aquatic invertebrates	48 h
Ethanediamine derivative	trade secret 1760-24-3	LC50	597 mg/l	fish	96 h
Ethanediamine derivative	trade secret 1760-24-3	EC50	81 mg/l	aquatic invertebrates	48 h
Ethanediamine derivative	trade secret 1760-24-3	ErC50	8.8 mg/l	algae	72 h
Dimethyl adipate	Trade secret	EC50	72 mg/l	aquatic invertebrates	48 h
Methoxysilane derivative	trade secret	LC50	>110 mg/l	fish	96 h
Methoxysilane derivative	trade secret	EC50	>122 mg/l	aquatic invertebrates	48 h



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Aquatic toxicity (acute) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
methanol	67-56-1	LC50	15,400 mg/l	fish	96 h
methanol	67-56-1	EC50	12,700 mg/l	fish	96 h
methanol	67-56-1	ErC50	22,000 mg/l	algae	96 h
ethylenediamine	trade secret	LC50	640 mg/l	fish	96 h
ethylenediamine	trade secret	EC50	16.7 mg/l	aquatic invertebrates	48 h
ethylenediamine	trade secret	ErC50	645 mg/l	algae	72 h

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

Data are not available.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Other adverse effects

Endocrine disrupting potential

None of the ingredients are listed.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Waste treatment-relevant information

Solvent reclamation/regeneration.

Sewage disposal-relevant information

Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.

Waste treatment of containers/packages

Only packagings which are approved (e.g. acc. to DOT) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.



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Remarks

Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

SECTION 14: Transport information

14.1 UN number	2037
14.2 UN proper shipping name	Receptacles, small, containing gas
14.3 Transport hazard class(es)	
Class	2.1 (gases) (flammable)
14.4 Packing group	not assigned to a packing group
14.5 Environmental hazards	non-environmentally hazardous acc. to the dangerous goods regulations
14.6 Special precautions for user	
There is no additional information.	
14.7 Transport in bulk according to Annex II of MARPOL and the IBC Code	
The cargo is not intended to be carried in bulk.	

Information for each of the UN Model Regulations

Transport of dangerous goods by road or rail (49 CFR US DOT)

Index number	2037
Proper shipping name	Receptacles, small, containing gas
- Particulars in the shipper's declaration	UN2037, Receptacles, small, containing gas, 2.1
- Reportable quantity (RQ)	550,873 lbs (250,096 kg) (methanol) (xylene)
Class	2.1
Danger label(s)	2.1



ERG No	115
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International Maritime Dangerous Goods Code (IMDG)

UN number	2037
Proper shipping name	RECEPTACLES, SMALL, CONTAINING GAS
- Particulars in the shipper's declaration	UN2037, RECEPTACLES, SMALL, CONTAINING GAS, 2.1, 23°C c.c.
Class	2.1



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Marine pollutant

-

Danger label(s)

2.1



Special provisions (SP)

191, 277, 303, 344

Excepted quantities (EQ)

E0

Limited quantities (LQ)

1 L

EmS

F-D, S-U

Stowage category

B

International Civil Aviation Organization (ICAO-IATA/DGR)

UN number

1993

Proper shipping name

Flammable liquid, n.o.s.

- Particulars in the shipper's declaration

UN1993, Flammable liquid, n.o.s., 3, III

Class

3

Packing group

III

Danger label(s)

3



Special provisions (SP)

A3

Excepted quantities (EQ)

E1

Limited quantities (LQ)

10 L

SECTION 15: Regulatory information

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

National regulations (United States)

Toxic Substance Control Act (TSCA)

all ingredients are listed

Superfund Amendment and Reauthorization Act (SARA TITLE III)

- The List of Extremely Hazardous Substances and Their Threshold Planning Quantities (EPCRA Section 302, 304)



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The List of Extremely Hazardous Substances and Their Threshold Planning Quantities

Name of substance	CAS No	Notes	Reportable quantity (pounds)	Threshold planning quantity (pounds)
ethylenediamine	107-15-3		5,000	10000

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings

Name of substance	CAS No	Remarks	Effective date
methanol	67-56-1		1987-01-01

Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)

- List of Hazardous Substances and Reportable Quantities (CERCLA section 102a) (40 CFR 302.4)

Name of substance	CAS No	Remarks	Statutory code	Final RQ pounds (Kg)
ethylenediamine	107-15-3		1	5000 (2270)
methanol	67-56-1		3 4	5000 (2270)

Legend

- 1 "1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act
3 "3" indicates that the source is section 112 of the Clean Air Act
4 "4" indicates that the source is section 3001 of the Resource Conservation and Recovery Act (RCRA)

Clean Air Act

Name of substance	CAS No	Type of registration	Basis for listing	Threshold quantity (lbs)
ethylenediamine	107-15-3	Toxic substance	b	20000

Legend

- b On EHS list, vapor pressure 10 mmHg or greater.

Right to Know Hazardous Substance List

- Toxic or Hazardous Substance List (MA-TURA)



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Name of substance	Name acc. to inventory	CAS No	DEP CODE	PBT / HHS / LHS	PBT / HHS Thres hold	De Minimis Concentration Threshold
ethylenediamine	1,2-Ethanediamine	107-15-3				1.0 %
methanol	Methanol	67-56-1				1.0 %

- Hazardous Substance List (NJ-RTK)

Name of substance	Name acc. to inventory	CAS No	Remarks	Classifications
ethylenediamine	ethylenediamine	107-15-3		CO F2
methanol	methyl alcohol (methanol) (methanol)	67-56-1		TE F3

Legend

CO Corrosive
F2 Flammable - Second Degree
F3 Flammable - Third Degree
TE Teratogenic

- Hazardous Substance List (Chapter 323) (PA-RTK)

Name of substance	Name acc. to inventory	CAS No	Classification
ethylenediamine	1,2-ETHANEDIAMINE	107-15-3	E
methanol	METHANOL	67-56-1	E

Legend

E Environmental hazard

- Hazardous Substance List (RI-RTK)

Name of substance	Name acc. to inventory	CAS No	References
ethylenediamine	1,2-Diaminoethane	107-15-3	T, F
methanol	methyl alcohol	67-56-1	T, F

Legend

F Flammability (NFPA®)
T Toxicity (ACGIH®)



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California Environmental Protection Agency (Cal/EPA): Proposition 65 - Safe Drinking Water and Toxic Enforcement Act of 1987

Proposition 65 List of chemicals

Name acc. to inventory	CAS No	Remarks	Type of the toxicity
methanol	67-56-1		developmental

Industry or sector specific available guidance(s)

NPCA-HMIS® III

Hazardous Materials Identification System. American Coatings Association.

Category	Rating	Description
Chronic	*	chronic (long-term) health effects may result from repeated overexposure
Health	2	temporary or minor injury may occur
Flammability	3	material that can be ignited under almost all ambient temperature conditions
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with water, polymerize, decompose, condense, or self-react. Non-explosive
Personal protection	-	

NFPA® 704

National Fire Protection Association: Standard System for the Identification of the Hazards of Materials for Emergency Response (United States).

Category	Degree of hazard	Description
Flammability	3	material that can be ignited under almost all ambient temperature conditions
Health	2	material that, under emergency conditions, can cause temporary incapacitation or residual injury
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

National inventories

Country	Inventory	Status
AU	AICS	all ingredients are listed
CA	DSL	not all ingredients are listed
CA	NDSL	not all ingredients are listed



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Country	Inventory	Status
CN	IECSC	all ingredients are listed
EU	ECSI	not all ingredients are listed
EU	REACH Reg.	not all ingredients are listed
JP	CSCL-ENCS	not all ingredients are listed
JP	ISHA-ENCS	not all ingredients are listed
KR	KECI	not all ingredients are listed
MX	INSQ	not all ingredients are listed
NZ	NZIoC	all ingredients are listed
PH	PICCS	all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	all ingredients are listed

Legend

AICS	Australian Inventory of Chemical Substances
CICR	Chemical Inventory and Control Regulation
CSCL-ENCS	List of Existing and New Chemical Substances (CSCL-ENCS)
DSL	Domestic Substances List (DSL)
ECSI	EC Substance Inventory (EINECS, ELINCS, NLP)
IECSC	Inventory of Existing Chemical Substances Produced or Imported in China
INSQ	National Inventory of Chemical Substances
ISHA-ENCS	Inventory of Existing and New Chemical Substances (ISHA-ENCS)
KECI	Korea Existing Chemicals Inventory
NDSL	Non-domestic Substances List (NDSL)
NZIoC	New Zealand Inventory of Chemicals
PICCS	Philippine Inventory of Chemicals and Chemical Substances (PICCS)
REACH Reg.	REACH registered substances
TCSI	Taiwan Chemical Substance Inventory
TSCA	Toxic Substance Control Act

15.2 Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

SECTION 16: Other information, including date of preparation or last revision

Indication of changes (revised safety data sheet)

Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
14.7	UN number: 1993	UN number: 2037	yes



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Section	Former entry (text/value)	Actual entry (text/value)	Safety-relevant
14.7	Proper shipping name: FLAMMABLE LIQUID, N.O.S.	Proper shipping name: RECEPTACLES, SMALL, CONTAINING GAS	yes
14.7	Particulars in the shipper's declaration: UN1993, FLAMMABLE LIQUID, N.O.S., 3, III, 23°C c.c.	Particulars in the shipper's declaration: UN2037, RECEPTACLES, SMALL, CONTAINING GAS, 2.1, 23°C c.c.	yes
14.7	Class: 3	Class: 2.1	yes
14.7	Packing group: III		yes
14.7	Danger label(s): 3	Danger label(s): 2.1	yes
14.7		Danger label(s): change in the listing (table)	yes
14.7	Special provisions (SP): 223, 274, 955	Special provisions (SP): 191, 277, 303, 344	yes
14.7	Excepted quantities (EQ): E1	Excepted quantities (EQ): E0	yes
14.7	Limited quantities (LQ): 5 L	Limited quantities (LQ): 1 L	yes
14.7	EmS: F-E, <u>S-E</u>	EmS: F-D, S-U	yes
14.7	Stowage category: A	Stowage category: B	yes

Abbreviations and acronyms

Abbr.	Descriptions of used abbreviations
29 CFR 1910.1000	29 CFR 1910.1000, Tables Z-1, Z-2, Z-3 - Occupational Safety and Health Standards: Toxic and Hazardous Substances (permissible exposure limits)
49 CFR US DOT	49 CFR U.S. Department of Transportation
ACGIH®	American Conference of Governmental Industrial Hygienists
ACGIH® 2019	From ACGIH®, 2019 TLVs® and BEIs® Book. Copyright 2019. Reprinted with permission. Information on the proper use of the TLVs® and BEIs®: http://www.acgih.org/tlv-bei-guidelines/policies-procedures-presentations/tlv-bei-position-statement
Acute Tox.	Acute toxicity
ATE	Acute Toxicity Estimate
Cal/OSHA PEL	California Division of Occupational Safety and Health (Cal/OSHA): Permissible Exposure Limits (PELs)



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Abbr.	Descriptions of used abbreviations
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
DEP CODE	Department of Environmental Protection Code
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
DOT	Department of Transportation (USA)
EC50	Effective Concentration 50 %. The EC50 corresponds to the concentration of a tested substance causing 50 % changes in response (e.g. on growth) during a specified time interval
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ErC50	≡ EC50: in this method, that concentration of test substance which results in a 50 % reduction in either growth (EbC50) or growth rate (ErC50) relative to the control
ERG No	Emergency Response Guidebook - Number
Eye Dam.	Seriously damaging to the eye
Eye Irrit.	Irritant to the eye
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
HHS	Higher hazard substance
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code
LC50	Lethal Concentration 50%: the LC50 corresponds to the concentration of a tested substance causing 50 % lethality during a specified time interval
LHS	Lower hazard substance
MARPOL	International Convention for the Prevention of Pollution from Ships (abbr. of "Marine Pollutant")
NFPA®	National Fire Protection Association (United States)
NIOSH REL	National Institute for Occupational Safety and Health (NIOSH): Recommended Exposure Limits (RELs)
NLP	No-Longer Polymer



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Abbr.	Descriptions of used abbreviations
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
Resp. Sens.	Respiratory sensitization
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
Skin Sens.	Skin sensitization
STEL	Short-term exposure limit
STOT SE	Specific target organ toxicity - single exposure
TLV®	Threshold Limit Values
TWA	Time-weighted average
vPvB	Very Persistent and very Bioaccumulative

Key literature references and sources for data

OSHA Hazard Communication Standard (HCS), 29 CFR 1910.1200.

Transport of dangerous goods by road or rail (49 CFR US DOT). International Maritime Dangerous Goods Code (IMDG). Dangerous Goods Regulations (DGR) for the air transport (IATA).

Classification procedure

Physical and chemical properties: The classification is based on tested mixture.

Health hazards, Environmental hazards: The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

List of relevant phrases (code and full text as stated in chapter 2 and 3)

Code	Text
H225	Highly flammable liquid and vapor.
H226	Flammable liquid and vapor.
H301	Toxic if swallowed.
H302	Harmful if swallowed.



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Code	Text
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H370	Causes damage to organs.

Disclaimer

This information is based upon the present state of our knowledge. This SDS has been compiled and is solely intended for this product.