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SECTION 1: Identification

1.1 **Product identifier**

Trade name Alternative number(s) Armor All Extreme Tire Shine - Aerosol

070612779588

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 state- ment
B.3	flammable aerosol	2	Flam. Aerosol 2	H223
B.5	gases under pressure	С	Press. Gas C	H280

For full text of abbreviations: see SECTION 16.

The most important adverse physicochemical, human health and environmental effects

Contains gas under pressure; may explode if heated. The mixture contains a substance that was identified as a PBT (persistent, bioaccumulative and toxic). The mixture contains a substance that was identified as vPvB (very persistent and very bioaccumulative).

Energizer.

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2.2 Label elements

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

- Signal word warning
- Pictograms
- GHS02, GHS04



- Hazard statements

H223	Flammable aerosol.
H280	Contains gas under pressure; may explode if heated.

- 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.
P211	Do not spray on an open flame or other ignition source.
P251	Pressurized container: Do not pierce or burn, even after use.
P410+P403	Protect from sunlight. Store in a well-ventilated place.
P410+P412	Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F.

2.3 Other hazards

Hazards not otherwise classified

Harmful to aquatic life with long lasting effects (GHS category 3: aquatic toxicity - acute and/or chronic).

Results of PBT and vPvB assessment

Containing a PBT-/vPvB-substance in a concentration of \ge 0,1%. Containing a PBT-substance in a concentration of \ge 0,1%. Containing a vPvB-substance in a concentration of \ge 0,1%.

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
isobutane	CAS No 75-28-5	1 - < 5	Flam. Gas 1 / H220 Press. Gas C / H280	
propane	CAS No 74-98-6	1-<5	sA / OSHA002 Flam. Gas 1 / H220 Press. Gas C / H280	



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Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
sodium nitrite	CAS No 7632-00-0	<1	Acute Tox. 3 / H301 Ox. Sol. 3 / H272	
morpholine	CAS No 110-91-8	<1	Acute Tox. 4 / H302 Acute Tox. 3 / H311 Acute Tox. 4 / H332 Skin Corr. 1B / H314 Flam. Liq. 3 / H226	

For full text of abbreviations: see SECTION 16.

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

Thaw frosted parts with lukewarm water. Do not rub affected area.

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

Unsuitable extinguishing media

Water jet



Safety Data Sheet acc. to 29 CFR 1910.1200 App D

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5.2 Special hazards arising from the substance or mixture

Contact with the product can cause burns and/or frostbite. Contains gas under pressure; may explode if heated.

Hazardous combustion products

Nitrogen oxides (NOx), 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.

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

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. Use only in well-ventilated areas.

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.



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7.2 Conditions for safe storage, including any incompatibilities

Level 1 Aerosol.

Managing of associated risks

- Flammability hazards

Do not spray on an open flame or other ignition source. Protect from sunlight.

Control of the effects

Protect against external exposure, such as

Frost

- 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)

							i				
Coun try	Name of agent	CAS No	Iden- tifier	TWA [ppm]	TWA [mg/ m³]	STEL [ppm]	STEL [mg/ m³]	Ceil- ing-C [ppm]	Ceil- ing-C [mg/ m³]	Nota tion	Sourc e
US	morpholine	110-91-8	REL	20 (10 h)	70 (10 h)	30	105				NIOSH REL
US	morpholine	110-91-8	TLV®	20							AC- GIH® 2019
US	morpholine	110-91-8	PEL	20	70						29 CFR 1910.1 000
US	morpholine (tet- rahydro-2H-1,4- oxazine)	110-91-8	PEL (CA)	20	70	30	105				Cal/ OSHA PEL
US	propane	74-98-6	PEL (CA)	1,000	1,800						Cal/ OSHA PEL
US	propane	74-98-6	REL	1,000 (10 h)	1,800 (10 h)						NIOSH REL
US	propane	74-98-6	PEL	1,000	1,800						29 CFR 1910.1 000



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Occup	Occupational exposure limit values (Workplace Exposure Limits)										
Coun try	Name of agent	CAS No	Iden- tifier	TWA [ppm]	TWA [mg/ m³]	STEL [ppm]	STEL [mg/ m³]	Ceil- ing-C [ppm]	Ceil- ing-C [mg/ m³]	Nota tion	Sourc e
US	propane	74-98-6	TLV®							oxy- gen, Simpl e Asp., E	AC- GIH® 2019
US	isobutane	75-28-5	REL	800 (10 h)	1,900 (10 h)						NIOSH REL
US	isobutane	75-28-5	TLV®			1,000				E	AC- GIH® 2019

Notation

Notation	
Ceiling-C	ceiling value is a limit value above which exposure should not occur
E	explosive
oxygen	Adequate oxygen delivery to the tissues is necessary for sustaining life
Simple Asp.	simple asphyxiants
STEĽ	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)
TWA	time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours time-

TWA time-weighted average (long-term exposure limit): measured or calculated in relation to a reference period of 8 hours timeweighted average (unless otherwise specified

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
sodium nitrite	7632-00-0	DNEL	2 mg/m³	human, inhalatory	worker (industry)	acute - systemic effects
sodium nitrite	7632-00-0	DNEL	2 mg/m ³	human, inhalatory	worker (industry)	chronic - system- ic effects
morpholine	110-91-8	DNEL	91 mg/m ³	human, inhalatory	worker (industry)	chronic - system- ic effects
morpholine	110-91-8	DNEL	36 mg/m ³	human, inhalatory	worker (industry)	chronic - local ef- fects
morpholine	110-91-8	DNEL	72 mg/m³	human, inhalatory	worker (industry)	acute - local ef- fects
morpholine	110-91-8	DNEL	1.04 mg/kg bw/day	human, dermal	worker (industry)	chronic - system- ic effects

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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
sodium nitrite	7632-00-0	PNEC	0.0054 ^{mg} / _l	aquatic organisms	freshwater	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	0.00616 ^{mg} / _l	aquatic organisms	marine water	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	21 ^{mg} / _l	aquatic organisms	sewage treat- ment plant (STP)	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	0.0195 ^{mg} / _{kg}	aquatic organisms	freshwater sedi- ment	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	0.0223 ^{mg} / _{kg}	aquatic organisms	marine sediment	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	0.000733 ^{mg} / _{kg}	terrestrial organ- isms	soil	short-term (single instance)
sodium nitrite	7632-00-0	PNEC	0.0054 ^{mg} / _l	aquatic organisms	water	intermittent re- lease
morpholine	110-91-8	PNEC	0.163 ^{mg} / _l	aquatic organisms	freshwater	short-term (single instance)
morpholine	110-91-8	PNEC	0.016 ^{mg} / _l	aquatic organisms	marine water	short-term (single instance)
morpholine	110-91-8	PNEC	10 ^{mg} / _l	aquatic organisms	sewage treat- ment plant (STP)	short-term (single instance)
morpholine	110-91-8	PNEC	1.83 ^{mg} / _{kg}	aquatic organisms	freshwater sedi- ment	short-term (single instance)
morpholine	110-91-8	PNEC	0.183 ^{mg} / _{kg}	aquatic organisms	marine sediment	short-term (single instance)
morpholine	110-91-8	PNEC	0.269 ^{mg} / _{kg}	terrestrial organ- isms	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.



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Skin protection

- Hand protection

Wear protective 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

During spraying wear suitable respiratory equipment.

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	aerosol (spray aerosol)
Color	various
Odor	characteristic

Other safety parameters

pH (value)	not determined
Melting point/freezing point	not determined
Initial boiling point and boiling range	-161.5 °C at 1,013 hPa
Flash point	not determined
Evaporation rate	not determined
Flammability (solid, gas)	flammable aerosol in accordance with GHS criteria

Explosive limits



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- Lower explosion limit (LEL)	5 vol%
- Upper explosion limit (UEL)	15 vol%
Vapor pressure	not determined
Density	not determined
Vapor density	this information is not available
Relative density	information on this property is not available
Solubility(ies)	not determined
Partition coefficient	
- n-octanol/water (log KOW)	this information is not available
Auto-ignition temperature	>410 °C (auto-ignition temperature (liquids and gases))
Viscosity	not relevant (aerosol)
Explosive properties	none
Oxidizing properties	none

9.2 Other information

Propellant content	9 %
Temperature class (USA, acc. to NEC 500)	T2 (maximum permissible surface temperature on the equipment: 300°C)

SECTION 10: Stability and reactivity

10.1 Reactivity

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

If heated:

Danger of explosion, Gas under pressure, Danger of bursting container

10.2 Chemical stability

See below "Conditions to avoid".





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10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Do not spray on an open flame or other ignition source. Keep away from heat.

Hints to prevent fire or explosion

Protect from sunlight.

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.

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

Shall not be classified as acutely toxic.

Acute toxicity estimate (ATE) of components of the mixture					
Name of substance	CAS No	Exposure route	ATE		
sodium nitrite	7632-00-0	oral	100 ^{mg} / _{kg}		
morpholine	110-91-8	oral	1,900 ^{mg} / _{kg}		
morpholine	110-91-8	dermal	500 ^{mg} / _{kg}		
morpholine	110-91-8	inhalation: vapor	11 ^{mg} /ı/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.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.



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Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans				
Name of substance CAS No Classification Number				
morpholine	110-91-8	3		

Legend 3

Not classifiable as to carcinogenicity in humans

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

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Harmful to aquatic life with long lasting effects.

Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No	Endpoint	Value	Species	Exposure time
isobutane	75-28-5	LC50	49.9 ^{mg} / _l	fish	96 h
isobutane	75-28-5	EC50	19.37 ^{mg} / _l	algae	96 h
propane	74-98-6	LC50	49.9 ^{mg} / _l	fish	96 h
propane	74-98-6	EC50	19.37 ^{mg} / _l	algae	96 h
sodium nitrite	7632-00-0	LC50	26.3 ^{mg} / _l	fish	96 h
sodium nitrite	7632-00-0	EC50	15.4 ^{mg} / _l	aquatic invertebrates	48 h
sodium nitrite	7632-00-0	ErC50	>100 ^{mg} / _l	algae	72 h



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Aquatic toxicity (acute) of components of the mixture					
Name of substance	CAS No Endpoint Value Species Exposure time				
morpholine	110-91-8	LC50	380 ^{mg} /l	fish	96 h
morpholine	110-91-8	EC50	44.5 ^{mg} / _l	aquatic invertebrates	48 h
morpholine	110-91-8	ErC50	9 ^{mg} / _l	algae	72 h

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
sodium nitrite	7632-00-0	EC50	114.9 ^{mg} / _l	aquatic invertebrates	80 d
sodium nitrite	7632-00-0	LC50	>95.6 ^{mg} / _l	aquatic invertebrates	80 d
morpholine	110-91-8	EC50	12.19 ^{mg} / _l	aquatic invertebrates	21 d

12.2 Persistence and degradability

Data are not available.

12.3 Bioaccumulative potential

The substance fulfills the very bioaccumulative criterion.

12.4 Mobility in soil

Data are not available.

12.5 Results of PBT and vPvB assessment

The mixture contains a substance that was identified as a PBT (persistent, bioaccumulative and toxic). The mixture contains a substance that was identified as vPvB (very persistent and very bioaccumulative).

12.6 Other adverse effects

Endocrine disrupting potential

None of the ingredients are listed.

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Sewage disposal-relevant information

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



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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.

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.

SECT	ION 14: Transport information	
14.1	UN number	1950
14.2	UN proper shipping name	Aerosols
14.3	Transport hazard class(es)	
	Class	2.1 (gases) (aerosol) (flammable)
14.4	Packing group	not assigned to a packing group
14.5	Environmental hazards	non-environmentally hazardous acc. to the danger- ous 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

DOT	
Transport of dangerous goods by road or ra	il (49 CFR US DOT)
Index number	1950
Proper shipping name	Aerosols
- Particulars in the shipper's declaration	UN1950, Aerosols, 2.1
- Reportable quantity (RQ)	14,641 lbs (6,647 kg) (sodium nitrite) (formaldehyde %)
Class	2.1
Danger label(s)	2.1
Special provisions (SP)	N82
ERG No	126



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International Maritime Dangerous Goods	Code (IMDG)
UN number	1950
Proper shipping name	AEROSOLS
- Particulars in the shipper's declaration	UN1950, AEROSOLS, 2.1
Class	2.1
Marine pollutant	-
Danger label(s)	2.1
Special provisions (SP)	63, 190, 277, 327, 344, 381, 959
Excepted quantities (EQ)	EO
Limited quantities (LQ)	1 L
EmS	F-D, S-U
Stowage category	-
International Civil Aviation Organization (ICAO-IATA/DGR)
UN number	1950
Proper shipping name	Aerosols, flammable
- Particulars in the shipper's declaration	UN1950, Aerosols, flammable, 2.1
Class	2.1
Danger label(s)	2.1
Special provisions (SP)	A145, A167
Excepted quantities (EQ)	EO
Limited quantities (LQ)	30 kg

15.1 Safety, health and environmental regulations specific for the product in question National regulations (United States)



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Superfund Amendment and Reauthorization Act (SARA TITLE III)

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings				
Name of substance CAS No Remarks Effective date				
sodium nitrite	7632-00-0		1995-01-01	

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)
sodium nitrite	7632-00-0		1	100 (45,4)

Legend

"1" indicates that the statutory source is section 311(b)(2) of the Clean Water Act

Clean Air Act

Name of substance	CAS No	Type of registra- tion	Basis for listing	Threshold quantity (lbs)
isobutane	75-28-5	Flammable sub- stance	f	10000
propane	74-98-6	Flammable sub- stance	f	10000

Legend

f Flammable gas.

Right to Know Hazardous Substance List

- Cleaning Product Right to Know Act Substance List (CA-RTK)

Name of substance	Name acc. to inventory	CAS No	Functional- ity	Authoritative Lists
Isobutane	Isobutane	75-28-5	propellant	EC Annex VI CMRs - Cat. 1A EC Annex VI CMRs - Cat. 1B
Aminomodified silicone-polyeth- er copolymer		Propriet- ary	film former	
Sodium nitrite		7632-00-0	preservative	
Morpholine		110-91-8	corrosion in- hibitor	



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Name of substance	Name acc. to inventory	CAS No	Functional- ity	Authoritative Lists
Polyalkylene Oxide		Propriet- ary	polymer	
1,3-bis(hydroxymethyl)-5,5-di- methylimidazolidine-2,4-dione	DMDM hydantoin	6440-58-0		Nonfunctional constituents
Octamethylcyclotetrasiloxane	Octamethylcyclotetrasiloxane (D4)	556-67-2	emulsifier	Canada PBiTs CECBP - Priority Chemicals EC PBTs
2,4-Imidazolidinedione, (hy- droxymethyl)-5,5-dimethyl-		27636-82-4	preservative	

- Toxic or Hazardous Substance List (MA-TURA)

Name of substance	Name acc. to inventory	CAS No	DEP CODE	PBT / HHS / LHS	PBT / HHS Thres hold	De Minimis Concentra- tion Threshold
sodium nitrite	Sodium nitrite	7632-00-0				1.0 %

- Hazardous Substances List (MN-ERTK)

Name of substance	Name acc. to inventory	CAS No	References	Remarks
isobutane	Alkanes		Ν	
propane	Propane	74-98-6	Α, Ο	
propane	Alkanes		Ν	
propane	Gases, Simple Asphyxiants		А	gases

Legend

A American Conference of Governmental Industrial Hygienists (ACGIH), "Threshold Limit Values for Chemical Substances and Physical Agents and Biological Exposure Indices for 1992-93", available from ACGIH

gases N

Refers to displacement of air asphyxiation hazard. National Institute for Occupational Safety and Health (NIOSH), "Recommendations for Occupational Safety and Health Standards," August 1988, available from NIOSH, Publications Dissemination Office, Division of Standards Development and Technology Transfer

0 Occupational Safety and Health Administration (OSHA), Safety and Health Standards, Code of Federal Regulations, title 29, part 1910, subpart Z, "Toxic and Hazardous Substances, 1990." General information: Minnesota Department of Labor and Industry, Oc-cupational Safety and Health Division

- Hazardous Substance List (NJ-RTK)



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Name of substance	Name acc. to inventory	CAS No	Remarks	Classifications
morpholine	morpholine	110-91-8		CO F3 R1
isobutane	isobutane (propane, 2-methyl-)	75-28-5		F4
propane	propane	74-98-6		F4
sodium nitrite	sodium nitrite	7632-00-0		

Legend

CO Corrosive

F3

Flammable - Third Degree Flammable - Fourth Degree Reactive - First Degree F4 R1

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

Name of substance	Name acc. to inventory	CAS No	Classification
isobutane	PROPANE, 2-METHYL-	75-28-5	
propane	PROPANE	74-98-6	
sodium nitrite	NITROUS ACID, SODIUM SALT	7632-00-0	E

Legend

E Environmental hazard

- Hazardous Substance List (RI-RTK)

Name of substance	Name acc. to inventory	CAS No	References
morpholine	Morpholine	110-91-8	T, F
isobutane	Butane	106-97-8	T, F
propane	liquefied petroleum gas	74-98-6	Т

Legend

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

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
ethylene glycol monomethyl ether	109-86-4		developmental, male
benzene	71-43-2		cancer



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Proposition 65 List of chemicals

Name acc. to inventory	CAS No	Remarks	Type of the toxicity
benzene	71-43-2		developmental, male
formaldehyde	50-00-0	gas	cancer

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	0	no significant risk to health
Flammability	4	material that rapidly or completely vaporizes at atmospheric pressure and normal am- bient temperature or that is readily dispersed in air and burn readily
Physical hazard	0	material that is normally stable, even under fire conditions, and will not react with wa- ter, 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	4	material that rapidly or completely vaporizes at atmospheric pressure and normal am- bient temperature or that is readily dispersed in air and burn readily
Health	0	material that, under emergency conditions, would offer no hazard beyond that of or- dinary combustible material
Instability	0	material that is normally stable, even under fire conditions
Special hazard		

National inventories



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Country	Inventory	Status
AU	AICS	not all ingredients are listed
CA	DSL	not all ingredients are listed
CA	NDSL	not all ingredients are listed
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	all ingredients are listed
MX	INSQ	not all ingredients are listed
NZ	NZIoC	not all ingredients are listed
PH	PICCS	not all ingredients are listed
TR	CICR	not all ingredients are listed
TW	TCSI	all ingredients are listed
US	TSCA	not all ingredients are listed

Legend

Legena	
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.



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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- relev- ant
9.1	Lower explosion limit (LEL): 3 vol%	Lower explosion limit (LEL): 5 vol%	yes
9.1	Auto-ignition temperature: >410 °C	Auto-ignition temperature: >410 °C (auto-ignition temperature (liquids and gases))	yes
15.1		Cleaning Product Right to Know Act Substance List (CA-RTK): change in the listing (table)	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 Sub- stances (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-presenta-tions/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)
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



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Abbr.	Descriptions of used abbreviations
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
Flam. Gas	Flammable gas
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
NPCA-HMIS® III	National Paint and Coatings Association: Hazardous Materials Identification System - HMIS® III, Third Edition
OSHA	Occupational Safety and Health Administration (United States)
Ox. Sol.	Oxidizing solid
РВТ	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
PNEC	Predicted No-Effect Concentration
ppm	Parts per million
Press. Gas	Gas under pressure
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
sA	Simple asphyxiants



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Abbr.	Descriptions of used abbreviations
Skin Corr.	Corrosive to skin
Skin Irrit.	Irritant to skin
STEL	Short-term exposure limit
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
H220	Extremely flammable gas.
H223	Flammable aerosol.
H226	Flammable liquid and vapor.
H272	May intensify fire; oxidizer.
H280	Contains gas under pressure; may explode if heated.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H314	Causes severe skin burns and eye damage.
H332	Harmful if inhaled.
OSHA002	May displace oxygen and cause rapid suffocation.

Disclaimer

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