

Cerakote H-Series: Part A

Version number: 2.2

Revision: 11/16/2021

SECTION 1: Identification

1.1 Product identifier

Trade name **Cerakote H-Series: Part A**

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

NIC Industries, Inc
7050 6th St.
White City Oregon 97503
United States

Telephone: 866-774-7628
e-mail: sds@nicindustries.com
Website: www.nicindustries.com

1.4 Emergency telephone number

Emergency information service **1-800-633-8253 (USA & Canada) or 001-1-801-629-0667 (International)**

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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.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
A.3	Serious eye damage/eye irritation	2	Eye Irrit. 2	H319
A.4S	Skin sensitization	1	Skin Sens. 1	H317
A.6	Carcinogenicity	1A	Carc. 1A	H350

For full text of abbreviations: see SECTION 16.

2.2 Label elements

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

- Signal word **DANGER**
- Pictograms

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GHS07, GHS08



- Hazard statements

- H315 Causes skin irritation.
- H317 May cause an allergic skin reaction.
- H319 Causes serious eye irritation.
- H350 May cause cancer.

- Precautionary statements

- P201 Obtain special instructions before use.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray.
- P272 Contaminated work clothing must not be allowed out of the workplace.
- P280 Wear protective gloves.
- P302+P352 If on skin: Wash with plenty of water.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P308+P313 If exposed or concerned: Get medical advice/attention.
- P321 Specific treatment (see on this label).
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P362 Take off contaminated clothing and wash it before reuse.
- P363 Wash contaminated clothing before reuse.
- P405 Store locked up.
- P501 Dispose of contents/container to industrial combustion plant.

- Hazardous ingredients for labelling Ambient Curable Refractory Resin, Carbon black, p-chlorobenzotrifluoride

2.3 Other hazards

Hazards not otherwise classified

- May be harmful in contact with skin (GHS category 5: acutely toxic - dermal).
- Very toxic to aquatic life with long lasting effects (GHS category 1: aquatic toxicity - acute and/or chronic).

SECTION 3: Composition/information on ingredients

3.1 Substances

Not relevant (mixture)

3.2 Mixtures

Description of the mixture

Name of substance	Identifier	Wt%
p-chlorobenzotrifluoride	CAS No 98-56-6	50 – < 75
Performance Ceramic #1	CAS No Trade Secret	10 – < 25
Ceramic Based Pigments and Additives	CAS No Trade Secret	10 – < 25

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Name of substance	Identifier	Wt%
Ambient Curable Refractory Resin	CAS No Trade Secret	10 - < 25
Chromium (III) oxide	CAS No 1308-38-9	0 - < 5
2-butanol	CAS No 78-92-2	0 - < 5
Performance Ceramic #3	CAS No Trade Secret	0 - < 5
Carbon black	CAS No 1333-86-4	0 - < 5
Performance Ceramic #2	CAS No Trade Secret	0 - < 5

** Trade Secret: In accordance with OSHA Hazard Communication Standard 29 CFR 1910.1200(i) and in accordance with the United Nations Globally Harmonized System of Classification and Labeling of Chemicals (GHS), the specific identity and/or exact percentage (concentration) of the composition has been withheld as a "Trade Secret."

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. In case of respiratory tract irritation, consult a physician. 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.

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SECTION 5: Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

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

5.2 Special hazards arising from the substance or mixture

Hazardous combustion products

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. If substance has entered a water course or sewer, inform the responsible authority.

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.

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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 feedingsuffs.

7.2 Conditions for safe storage, including any incompatibilities

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 substance	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling-C [ppm]	Ceiling-C [mg/m ³]	Notation	Source
US	Carbon black	PEL (CA)		3.5						Cal/OSHA PEL
US	Carbon black	PEL		3.5						29 CFR 1910.1000
US	Carbon black	REL		3.5 (10 h)					appx-A, appx-C	NIOSH REL
US	Carbon black	TLV®		3					i	ACGIH® 2021
US	Carbon black	REL		0.1 (10 h)					PAHs, appx-A, appx-C	NIOSH REL
US	Performance Ceramic #1	TLV®		10						ACGIH® 2021
US	Performance Ceramic #1	PEL		15					i, dust	29 CFR 1910.1000
US	Performance Ceramic #1	REL							lowest, appx-A	NIOSH REL
US	Performance Ceramic #2	REL		6 (10 h)						NIOSH REL
US	2-Butanol	TLV®	100							ACGIH® 2021

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Occupational exposure limit values (Workplace Exposure Limits)										
Country	Name of substance	Identifier	TWA [ppm]	TWA [mg/m ³]	STEL [ppm]	STEL [mg/m ³]	Ceiling-C [ppm]	Ceiling-C [mg/m ³]	Notation	Source
US	2-Butanol	PEL (CA)	100	305						Cal/OSHA PEL
US	2-Butanol	REL	100 (10 h)	305 (10 h)	150	455				NIOSH REL
US	2-Butanol	PEL	150	450						29 CFR 1910.1000

Notation

- appx-A NIOSH Potential Occupational Carcinogen (Appendix A)
- appx-C Appendix C - Supplementary Exposure Limits
- Ceiling-C ceiling value is a limit value above which exposure should not occur
- dust as dust
- i inhalable fraction
- lowest exposure by all routes should be carefully controlled to levels as low as possible
- PAHs as polycyclic aromatic hydrocarbons (PAHs)
- STEL 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-weighted average (unless otherwise specified)

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.

Environmental exposure controls

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

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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state	Liquid
Color	Various
Particle	Not relevant (liquid)
Odor	Ammoniacal

Other safety parameters

pH (value)	Not determined
Melting point/freezing point	Not determined
Initial boiling point and boiling range	>133.8 °C
Flash point	39 °C
Evaporation rate	Not determined
Flammability (solid, gas)	Not relevant (fluid)
Vapor pressure	0.018 Pa at 25 °C
Density	Not determined
Vapor density	Not available
Relative density	Not available
Solubility(ies)	Not determined

Partition coefficient

- n-octanol/water (log KOW)	Not available
Auto-ignition temperature	600 °C (auto-ignition temperature (liquids and gases))
Viscosity	Not determined
Explosive properties	None
Oxidizing properties	None

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Flammable liquids

- Sustained combustibility No

9.2 Other information

Temperature class (USA, acc. to NEC 500)	T1 (maximum permissible surface temperature on the equipment: 450°C)
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SECTION 10: Stability and reactivity

10.1 Reactivity

Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials".

10.2 Chemical stability

See below "Conditions to avoid".

10.3 Possibility of hazardous reactions

No known hazardous reactions.

10.4 Conditions to avoid

Moisture.

10.5 Incompatible materials

Oxidizers. Strong acids. Alkalines.

10.6 Hazardous decomposition products

Carbon dioxide, carbon monoxide, and silicon oxides may be produced from all coating formulations. Chlorine-containing gases, fluorine-containing gases may be produced in products containing p-chlorobenzotrifluoride. 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.

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

Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	CAS No	Exposure route	ATE
Ceramic Based Pigments and Additives	Trade Secret	Inhalation: vapor	11 mg _l /4h
Ceramic Based Pigments and Additives	Trade Secret	Inhalation: dust/mist	>2.3 mg _l /4h

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Skin corrosion/irritation

Causes skin irritation.

Serious eye damage/eye irritation

Causes serious eye irritation.

Respiratory or skin sensitization

May cause an allergic skin reaction.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

May cause cancer.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans

Name of substance	Classification	Number
Performance Ceramic #1	2B	
Carbon black	2B	
Performance Ceramic #2	3	
p-chlorobenzotrifluoride	2B	

Legend

2B Possibly carcinogenic to humans
 3 Not classifiable as to carcinogenicity in humans

National Toxicology Program (United States): Report on Carcinogens

Name of substance	CAS No	Classification	Number
Carbon black	1333-86-4	Known to be human carcinogens	1st Report on Carcinogens

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.

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SECTION 12: Ecological information

12.1 Toxicity

Very toxic 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
p-chlorobenzotrifluoride	98-56-6	LC50	6.5 mg/l	Fish	24 h
p-chlorobenzotrifluoride	98-56-6	ErC50	>0.41 mg/l	Algae	72 h
p-chlorobenzotrifluoride	98-56-6	EC50	>0.41 mg/l	Algae	72 h
Chromium (III) oxide	1308-38-9	ErC50	>148.1 µg/l	Algae	72 h
Chromium (III) oxide	1308-38-9	EC50	13.3 µg/l	Algae	72 h
2-butanol	78-92-2	LC50	2,993 mg/l	Fish	96 h
2-butanol	78-92-2	EC50	308 mg/l	Aquatic invertebrates	48 h
2-butanol	78-92-2	ErC50	2,029 mg/l	Algae	96 h
Performance Ceramic #3	Trade Secret	LC50	100 mg/l	Fish	96 h
Performance Ceramic #3	Trade Secret	EC50	>100 mg/l	Aquatic invertebrates	24 h
Carbon black	1333-86-4	LC50	>1,000 mg/l	Fish	96 h
Carbon black	1333-86-4	EC50	>5,600 mg/l	Aquatic invertebrates	24 h
Carbon black	1333-86-4	ErC50	>10,000 mg/l	Algae	72 h

Aquatic toxicity (chronic) of components of the mixture

Name of substance	CAS No	Endpoint	Value	Species	Exposure time
p-chlorobenzotrifluoride	98-56-6	EC50	242.1 mg/l	Microorganisms	30 min
Ceramic Based Pigments and Additives	Trade Secret	EC50	300.4 mg/l	Microorganisms	3 h
Chromium (III) oxide	1308-38-9	EC50	>10,000 mg/l	Microorganisms	3 h
Carbon black	1333-86-4	EC50	>1,000 mg/l	Microorganisms	3 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.

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12.5 Results of PBT and vPvB assessment

Data are not available.

12.6 Endocrine disrupting properties

None of the ingredients are listed.

12.7 Other adverse effects

Data are not available.

SECTION 13: Disposal considerations**13.1 Waste treatment methods****Product/packaging disposal**

Do not empty into drains. Avoid release to the environment. Contact a licensed professional waste disposal service to dispose of this material and its packaging.

Waste treatment of containers/packages

Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.

Hazardous waste code(s)

D001, F003

The waste code(s) should be assigned in discussion between the user and the waste disposal company.

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** not subject to transport regulations**14.2 UN proper shipping name** not relevant**14.3 Transport hazard class(es)** not assigned**14.4 Packing group** not assigned**14.5 Environmental hazards** not assigned**14.6 Special precautions for user**

Cerakote H-Series Part A products do not need to be regulated for purposes of transportation due to the fact that the p-chlorobenzotrifluoride (CAS# 98-56-6) contained in the mixture does not sustain combustion. Per 49 CFR § 173.120(a)(3) of the hazardous materials regulations, liquids with a flash point greater than 35°C that do not sustain combustion according to ASTM D 4206 do not meet the definition of a Class 3 Flammable Liquid. Additionally, International Air Transport Association (IATA) Dangerous Goods Regulations section 3.3.1.3(a) states that liquids which do not sustain combustion "need not be considered as flammable" if the liquid has "passed a suitable test for combustibility" as prescribed by the UN Manual of Tests and Criteria, Part III, subsection 32.5.2. ASTM D 4206 standards are identical to the UN Manual standards; it is thus considered to be a suitable test for combustibility. For the aforementioned reasons, Cerakote H-Series Part A is not considered regulated for purposes of transportation.

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.

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Information for each of the UN Model Regulations

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

Not subject to transport regulations.

International Maritime Dangerous Goods Code (IMDG) - Additional information

Not subject to IMDG.

International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information

Not subject to ICAO-IATA.

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)

None of the ingredients are listed.

- Specific Toxic Chemical Listings (EPCRA Section 313)

Toxics Release Inventory: Specific Toxic Chemical Listings

Name of substance	CAS No	Remarks	Effective date
2-butanol	78-92-2		12/31/1986

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

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

None of the ingredients are listed.

Clean Air Act

None of the ingredients are listed.

Right to Know Hazardous Substance List

- Toxic or Hazardous Substance List (MA-TURA)

Name of substance	CAS No	DEP CODE	PBT / HHS / LHS	PBT / HHS Threshold	De Minimis Concentration Threshold
2-butanol	78-92-2		LHS		1.0 %

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- Hazardous Substances List (MN-ERTK)

Name of substance	References	Remarks
Performance Ceramic #1	A	
Carbon black	A, N, O, R, *	
Performance Ceramic #2	A, N, O, R, *	
2-butanol	A, O	

Legend

- * Substances which are regulated by OSHA as carcinogens; have been categorized by the ACGIH as either "human carcinogens" or "suspect of carcinogenic potential for man"; have been evaluated by the International Agency for Research on Cancer (IARC) and found to be carcinogens or potential carcinogens; or have been listed as a carcinogen or potential carcinogen in the Annual Report on Carcinogens published by the National Toxicology Program (NTP).
- 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
- N 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
- O 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, Occupational Safety and Health Division
- R International Agency for Research on Cancer (IARC) Monographs on the Evaluation of the Carcinogenic Risks to Humans; Overall Evaluations of Carcinogenicity: An Updating of IARC Monographs Volumes 1 to 42, Supplement 7 (1987). Available from: WHO Publications Centre USA

- Hazardous Substance List (NJ-RTK)

Name of substance	Remarks	Classifications
Performance Ceramic #1		
Carbon black		CA
Chromium (III) oxide		
Chromium (III) oxide		
2-butanol		F3

Legend

- CA Carcinogenic
- F3 Flammable - Third Degree

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

Name of substance	Classification
Performance Ceramic #1	
Carbon black	
Chromium (III) oxide	*, E, S
Performance Ceramic #2	
2-butanol	E

Legend

- * Any compound of this substance is also an environmental hazard
- E Environmental hazard
- S Special hazardous substance

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- Hazardous Substance List (RI-RTK)

Name of substance	References
Performance Ceramic #1	T
Carbon black	T
2-butanol	T, F

Legend

F Flammability (NFPA®)
T 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 of substance	Remarks	Type of the toxicity
Performance Ceramic #1	airborne, unbound particles of respirable size	cancer
Carbon black	airborne, unbound particles of respirable size	cancer
p-chlorobenzotrifluoride		cancer

VOC content

All Cerakote coatings are VOC compliant under the EPA and have low to no VOC content. To find out the VOC content of an individual coating please contact sds@nicindustries.com for more information.

Industry or sector specific available guidance(s)

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	2	Material that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur
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		

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National inventories

Country	Inventory	Status
AU	AICS	All ingredients are listed
CA	DSL	All ingredients are listed
CN	IECSC	All ingredients are listed
EU	ECSI	All ingredients are listed
EU	REACH Reg.	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	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
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

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

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Abbr.	Descriptions of used abbreviations
ACGIH® 2021	From ACGIH®, 2021 TLVs® and BEIs® Book. Copyright 2021. 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
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)
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
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
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
HHS	Higher hazard substance
IARC	International Agency for Research on Cancer
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
OSHA	Occupational Safety and Health Administration (United States)
PBT	Persistent, Bioaccumulative and Toxic
PEL	Permissible exposure limit
ppm	Parts per million
RTECS	Registry of Toxic Effects of Chemical Substances (database of NIOSH with toxicological information)
STEL	Short-term exposure limit

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Abbr.	Descriptions of used abbreviations
TLV®	Threshold Limit Values
TWA	Time-weighted average
VOC	Volatile Organic Compounds
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 section 2 and 3)

Code	Text
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H350	May cause cancer.