SAFETY DATA SHEET

according to the OSHA Hazard Communication Standard

Genentech
A Member of the Roche Group

KADCYLA Vials 160 mg

Version	Revision Date:	Date of last issue: 07/28/2025
1.1	09/02/2026	Date of first issue: 07/28/2025

SECTION 1. IDENTIFICATION

Product name : KADCYLA Vials 160 mg

Product code : RO530-4020/F02-00

Common name(s), synonym(s) of the substance : KADCYLA Lyophilized Vials

Manufacturer or supplier's details

Company name of supplier : Genentech, Inc.

Address : 1 DNA Way
South San Francisco, CA 94080
USA

Telephone : 001-(650) 225-1000

E-mail address : info.sds@roche.com

Emergency telephone

In case of emergencies: : US CHEMTREC PHONE (800)-424-9300

Recommended use of the chemical and restrictions on use

Recommended use : Formulated pharmaceutical active substance

SECTION 2. HAZARDS IDENTIFICATION

GHS classification in accordance with the OSHA Hazard Communication Standard (29 CFR 1910.1200)

Hazards for the product as supplied

Combustible dust

Acute toxicity (Oral) : Category 3

Acute toxicity (Inhalation) : Category 4

Germ cell mutagenicity	:	Category 1B
Reproductive toxicity	:	Category 1B

Other hazards
None known.

GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : May form combustible dust concentrations in air.

H301 Toxic if swallowed.

H332 Harmful if inhaled.

H340 May cause genetic defects.

H360FD May damage fertility. May damage the unborn child.

Precautionary Statements :

Prevention:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions have been read and understood.

P261 Avoid breathing dust.

P264 Wash skin thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P271 Use only outdoors or in a well-ventilated area.

P280 Wear protective gloves, protective clothing, eye protection and face protection.

Response:

P301 + P310 + P330 IF SWALLOWED: Immediately call a POISON CENTER/ doctor. Rinse mouth.

P304 + P340 + P312 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER/

doctor if you feel unwell.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Storage:
P405 Store locked up.

Disposal:
P501 Dispose of contents/ container to an approved waste disposal plant.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

Components

Chemical name	CAS No./Unique ID	Concentration (% w/w)	Trade secret
Trastuzumab emtansine	1018448-65-1*	24.4	-
.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl	57-50-1*	73.4	-
Butanedioic acid, sodium salt (1:2)	150-90-3*	2	-
Sorbitan, monododecanoate, poly(oxy-1,2-ethanediyl) derivs.	9005-64-5*	0.2	-

* Indicates that the identifier is a CAS No.

SECTION 4. FIRST AID MEASURES

General advice : Move out of dangerous area.
Consult a physician.
Show this material safety data sheet to the doctor in attendance.

Symptoms of poisoning may appear several hours later.
Do not leave the victim unattended.

If inhaled : Consult a physician after significant exposure.

If unconscious, place in recovery position and seek medical advice.

In case of skin contact : Wash off with soap and water.

In case of eye contact : Flush eyes with water as a precaution.

Remove contact lenses.

Protect unharmed eye.

Keep eye wide open while rinsing.

If eye irritation persists, consult a specialist.

If swallowed : Induce vomiting immediately and call a physician.

Keep respiratory tract clear.

Do not give milk or alcoholic beverages.

Never give anything by mouth to an unconscious person.

If symptoms persist, call a physician.

Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed : Toxic if swallowed.

Harmful if inhaled.

May cause genetic defects.

May damage fertility. May damage the unborn child.

Protection of first-aiders : First Aid responders should pay attention to self-protection and use the recommended protective clothing

Notes to physician : Treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Unsuitable extinguishing media	:	High volume water jet
Specific hazards during fire fighting	:	Do not allow run-off from fire fighting to enter drains or water courses.
Hazardous combustion products	:	Carbon oxides Nitrogen oxides (NOx)
Further information	:	Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	Prevent any exposure Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. Refer to protective measures listed in sections 7 and 8.
Environmental precautions	:	Prevent product from entering drains.

Prevent further leakage or spillage if safe to do so.

If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Wash contaminated surfaces with sodium hydroxide solution, c(NaOH)=0.5 mol/L to 1 mol/L, and rinse with water

Keep in suitable, closed containers for disposal.

SECTION 7. HANDLING AND STORAGE

Advice on protection against fire and explosion : Avoid dust formation.

Provide appropriate exhaust ventilation at places where dust is formed.

Advice on safe handling : Avoid formation of respirable particles.

Do not breathe vapors/dust.

Avoid exposure - obtain special instructions before use.

Avoid contact with skin and eyes.

For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the application area.

Provide sufficient air exchange and/or exhaust in work rooms.

Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage : Prevent unauthorized access.

Keep container tightly closed in a dry and well-ventilated place.

Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Electrical installations / working materials must comply with the technological safety standards.

Storage temperature : Protect from moisture.
Protect from heat and light

Further information on storage stability : Keep in a dry place.
No decomposition if stored and applied as directed.

Packaging material : Suitable material: Vials, glass, Stainless steel

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl	57-50-1	TWA	10 mg/m3	ACGIH
		TWA (Respirable)	5 mg/m3	NIOSH REL
		TWA (total)	10 mg/m3	NIOSH REL
		TWA (total dust)	15 mg/m3	OSHA Z-1
		TWA (respirable fraction)	5 mg/m3	OSHA Z-1
		TWA (Total dust)	15 mg/m3	OSHA P0
		TWA (respirable dust fraction)	5 mg/m3	OSHA P0
Trastuzumab emtansine	1018448-65-1	IOEL	0.0003 mg/m3	Roche Industrial Hygiene Committee (RIHC)

Personal protective equipment

Respiratory protection : General and local exhaust ventilation is recommended to maintain vapor exposures below recommended limits. Where concentrations are above recommended limits or are unknown, appropriate respiratory protection should be worn.

Follow OSHA respirator regulations (29 CFR 1910.134) and use NIOSH/MSHA approved respirators. Protection provided by air purifying respirators against exposure to any hazardous chemical is limited. Use a positive pressure air supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstance where air purifying respirators may not provide adequate protection.

Hand protection

In case of contact through splashing:

Material	:	Nitrile rubber
Break through time	:	> 30 min
Glove thickness	:	> 0.11 mm

In case of full contact:

Material	:	butyl-rubber
Break through time	:	> 480 min
Glove thickness	:	> 0.4 mm

Remarks	:	Wear appropriate protective gloves to prevent skin contact. Replace torn or punctured gloves promptly.
Eye protection	:	Eye wash bottle with pure water Tightly fitting safety goggles
Skin and body protection	:	Dust impervious protective suit Choose body protection according to the amount and concentration of the dangerous substance at the work place.
Protective measures	:	Instruction of employees mandatory
Hygiene measures	:	Avoid contact with skin, eyes and clothing. When using do not eat or drink. When using do not smoke.

Wash hands before breaks and immediately after handling the product.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	powder, sterile, (lyophilized)
Color	:	off-white
Odor	:	Not applicable
Odor Threshold	:	Not applicable
pH	:	Not applicable
Melting point/ range	:	No data available
Boiling point/boiling range	:	No data available
Flash point	:	No data available
Evaporation rate	:	No data available
Flammability (solid, gas)	:	No data available
Self-ignition	:	No data available

Upper explosion limit / Upper flammability limit	:	No data available
Lower explosion limit / Lower flammability limit	:	No data available
Vapor pressure	:	No data available
Relative vapor density	:	Not applicable
Relative density	:	No data available
Density	:	No data available

Solubility(ies)

Water solubility	:	soluble
Solubility in other solvents	:	No data available
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	No data available
Decomposition temperature	:	No data available

Viscosity

Viscosity, dynamic	:	Not applicable
Viscosity, kinematic	:	Not applicable

Explosive properties	:	No data available
Oxidizing properties	:	No data available

Particle characteristics

Particle Size Distribution	:	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	No dangerous reaction known under conditions of normal use.
Chemical stability	:	Stable under normal conditions. Proteins are temperature-sensitive; the thermal denaturation has an impact on quality but does not affect Plant and Process Safety; during decomposition no flammable gas, no organic peroxide and no oxidising substances are created Stable under normal conditions.
Possibility of hazardous reactions	:	No decomposition if stored and applied as directed. Dust may form explosive mixture in air.
Conditions to avoid	:	No data available
Incompatible materials	:	Not applicable
Hazardous decomposition products	:	No hazardous decomposition products are known.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Toxic if swallowed.

Harmful if inhaled.

Product:

Acute oral toxicity : Acute toxicity estimate: 113.81 mg/kg

Method: Expert judgment

Acute inhalation toxicity : Acute toxicity estimate: 1.14 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: Expert judgment

Components:

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl:

Acute oral toxicity : LD50 Oral (Rat): 29,700 mg/kg

Trastuzumab emtansine:

Acute oral toxicity : Acute toxicity estimate (Mouse): 27.77 mg/kg

Method: Expert judgment

Acute toxicity estimate (Mouse): 0.5 mg/kg

Method: OECD Test Guideline 423

The value is given in analogy to the following substances: Ansamitosin P3

Acute inhalation toxicity : Acute toxicity estimate (Rat): 0.277 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

Method: Expert judgment

Acute toxicity estimate (Rat): 0.005 mg/l

Exposure time: 4 h

Test atmosphere: dust/mist

The value is given in analogy to the following substances: Ansamitosin P3

Acute toxicity (other routes of administration)	:	HNSTD (Highest Non-Severely Toxic Dose) (cynomolgus monkey): 30 mg/kg Application Route: i.v. HNSTD (Highest Non-Severely Toxic Dose) (Rat): 20 mg/kg Application Route: i.v.

Skin corrosion/irritation
Based on available data, the classification criteria are not met.

Product:

Assessment	:	No skin irritation
Remarks	:	Expert judgment

Components:

Trastuzumab emtansine:

Result	:	Irritating to skin.
Remarks	:	Expert judgment

Serious eye damage/eye irritation
Not classified due to lack of data.

Respiratory or skin sensitization

Skin sensitization
Not classified due to lack of data.

Respiratory sensitization
Not classified due to lack of data.

Germ cell mutagenicity
May cause genetic defects.

Product:

Germ cell mutagenicity - Assessment	:	In vivo tests showed mutagenic effects

Components:

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl:

Genotoxicity in vitro	:	Test Type: In vitro mammalian cell gene mutation test

Result: negative

Trastuzumab emtansine:

Genotoxicity in vitro	:	Method: OECD Test Guideline 471 Result: negative The value is given in analogy to the following substances: DM1
Genotoxicity in vivo	:	Method: Mutagenicity (micronucleus test) Result: positive The value is given in analogy to the following substances: DM1
Germ cell mutagenicity - Assessment	:	In vivo tests showed mutagenic effects

Carcinogenicity

Based on available data, the classification criteria are not met.

Product:

Carcinogenicity - Assessment	:	Weight of evidence does not support classification as a carcinogen

Components:

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl:

Remarks	:	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Trastuzumab emtansine:

Carcinogenicity - Assessment	:	Limited evidence of a carcinogenic effect.

IARC No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

OSHA No component of this product present at levels greater than or equal to 0.1% is

on OSHA's list of regulated carcinogens.

NTP No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

Reproductive toxicity

May damage fertility. May damage the unborn child.

Product:

Reproductive toxicity - Assessment	:	Presumed human reproductive toxicant, May damage fertility. May damage the unborn child.

Components:

Trastuzumab emtansine:

Reproductive toxicity - Assessment	:	Presumed human reproductive toxicant, May damage fertility. May damage the unborn child.

STOT-single exposure

Based on available data, the classification criteria are not met.

Product:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.
Remarks	:	Expert judgment

Components:

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, single exposure.

Trastuzumab emtansine:

Target Organs	:	Nervous system, Reproductive organs, Bone marrow
Assessment	:	May cause damage to organs.
Remarks	:	i.v.

STOT-repeated exposure

Based on available data, the classification criteria are not met.

Product:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Remarks	:	Expert judgment

Components:

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl:

Assessment	:	The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Trastuzumab emtansine:

Target Organs	:	Nervous system, Reproductive organs, Bone marrow
Assessment	:	May cause damage to organs through prolonged or repeated exposure.
Remarks	:	i.v.

Repeated dose toxicity

Components:

Trastuzumab emtansine:

Species	:	cynomolgus monkey
	:	10 mg/kg
Application Route	:	i.v.
Exposure time	:	9 Weeks
Number of exposures	:	3
Remarks	:	Subacute toxicity

Aspiration toxicity

Not classified due to lack of data.

Components:

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl:

No data available

Further information

Product:

Remarks	:	No data available

Components:

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl:

Remarks : Health injuries are not known or expected under normal use.

Trastuzumab emtansine:

Remarks : after parenteral application, rare cases of hypersensitivity, including anaphylactic shock, can occur

The value is given in analogy to the following substances: Trastuzumab

Endocrine disrupting properties

Components:

Trastuzumab emtansine:

Assessment : Does not have endocrine disrupting properties.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

Components:

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl:

Ecotoxicology Assessment

Acute aquatic toxicity : This product has no known ecotoxicological effects.

Chronic aquatic toxicity : This product has no known ecotoxicological effects.

Toxicity Data on Soil : Not expected to adsorb on soil.

Other organisms relevant to the environment : No data available

Trastuzumab emtansine:

Toxicity to fish : LC50 (Poecilia reticulata (guppy)): > 100 mg/l

Exposure time: 96 h

Test Type: semi-static test

Method: OECD Test Guideline 203

GLP: yes

Remarks: nominal concentration

NOEC (Poecilia reticulata (guppy)): < 100 mg/l

Exposure time: 96 h

Test Type: semi-static test

Method: OECD Test Guideline 203

GLP: yes

Remarks: nominal concentration

Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): > 100 mg/l

End point: Immobilization

Exposure time: 48 h

Method: OECD Test Guideline 202

GLP: yes

Remarks: nominal concentration

NOEC (Daphnia magna (Water flea)): 100 mg/l

End point: Immobilization

Exposure time: 48 h

Method: OECD Test Guideline 202

GLP: yes

Remarks: nominal concentration

Toxicity to algae/aquatic plants : ErC50 (Desmodesmus subspicatus (green algae)): > 100 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

GLP: yes

Remarks: nominal concentration

EyC50 (Desmodesmus subspicatus (green algae)): ca. 100 mg/l

Exposure time: 72 h

Method: OECD Test Guideline 201

GLP: yes

Remarks: nominal concentration

Toxicity to microorganisms : (activated sludge): 49.5 mg/l

Exposure time: 14 d

Test Type: Respiration inhibition

Method: OECD Test Guideline 301F

GLP: yes

Remarks: Barely inhibitory on aerobic bacterial reproduction (activated sludge)
nominal concentration

Persistence and degradability

Components:

Trastuzumab emtansine:

Biodegradability : Concentration: 1,000 mg/l

Theoretical oxygen demand

Result: Not readily biodegradable.

Biodegradation: 84 %

Exposure time: 28 d

Method: OECD Test Guideline 301F

GLP: yes

Bioaccumulative potential

Components:

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl:

Partition coefficient: n-octanol/water : log Pow: -3.7 (68 °F / 20 °C)

Trastuzumab emtansine:

Partition coefficient: n-octanol/water : Remarks: No data available

Mobility in soil
No data available

Other adverse effects

Product:

Ozone-Depletion Potential	:	Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).
Additional ecological information	:	No data available

Components:

Trastuzumab emtansine:

Results of PBT and vPvB assessment	:	Not persistent, bioaccumulative, and toxic (PBT).

Endocrine disrupting properties

Components:

Trastuzumab emtansine:

Assessment	:	Does not have endocrine disrupting properties.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal methods

Waste from residues	:	Do not dispose of waste into sewer. Do not contaminate ponds, waterways or ditches with chemical or used container. Send to a licensed waste management company.
Contaminated packaging	:	Empty remaining contents. Dispose of as unused product. Do not re-use empty containers.

SECTION 14. TRANSPORT INFORMATION

International Regulations

UNRTDG

UN number	:	UN 3249
Proper shipping name	:	MEDICINE, SOLID, TOXIC, N.O.S.
Class	:	6.1
Packing group	:	III
Labels	:	6.1
Environmentally hazardous	:	no

IATA-DGR

UN/ID No.	:	UN 3249
Proper shipping name	:	Medicine, solid, toxic, n.o.s.
Class	:	6.1
Packing group	:	III
Labels	:	Division 6.1 - Toxic substances
Packing instruction (cargo aircraft)	:	677
Packing instruction (passenger aircraft)	:	670

IMDG-Code

UN number	:	UN 3249
Proper shipping name	:	MEDICINE, SOLID, TOXIC, N.O.S.
Class	:	6.1
Packing group	:	III
Labels	:	6.1
EmS Code	:	F-A, S-A
Marine pollutant	:	no

Transport in bulk according to IMO instruments
Not applicable

Domestic regulation

49 CFR

UN/ID/NA number	:	UN 3249
Proper shipping name	:	Medicine, solid, toxic, n.o.s.
Class	:	6.1
Packing group	:	III
Labels	:	Division 6.1 - Toxic substances
ERG Code	:	151
Marine pollutant	:	no

Special precautions for user

Remarks : No data available

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

SECTION 15. REGULATORY INFORMATION

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 302 Extremely Hazardous Substances Threshold Planning Quantity

This material does not contain any components with a section 302 EHS TPQ.

SARA 311/312 Hazards : Combustible dust

Acute toxicity (any route of exposure)

Germ cell mutagenicity

Reproductive toxicity

SARA 313 : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCMI Intermediate or Final VOC's (40 CFR 60.489).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any priority pollutants related to the U.S. Clean Water Act

US State Regulations

Massachusetts Right To Know

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl	57-50-1

Pennsylvania Right To Know

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl	57-50-1
Trastuzumab emtansine	1018448-65-1

Maine Chemicals of High Concern

Product does not contain any listed chemicals

Vermont Chemicals of High Concern

Product does not contain any listed chemicals

Washington Chemicals of High Concern

Product does not contain any listed chemicals

California Permissible Exposure Limits for Chemical Contaminants

.alpha.-D-Glucopyranoside, .beta.-D-fructofuranosyl	57-50-1

The ingredients of this product are reported in the following inventories:

AU AIIC	:	Not in compliance with the inventory
CA. DSL	:	This product contains the following components that are not on the Canadian DSL nor NDSL.

Trastuzumab emtansine

NZ NZIoC	:	Not in compliance with the inventory
JP ENCS	:	Not in compliance with the inventory
JP ISHL	:	Not in compliance with the inventory
KR KECI	:	Not in compliance with the inventory
PH PICCS	:	Not in compliance with the inventory
CN IECSC	:	Not in compliance with the inventory
TW TCSI	:	Not in compliance with the inventory
US TSCA	:	Product contains substance(s) not listed on TSCA inventory.
TH TECI	:	Not in compliance with the inventory

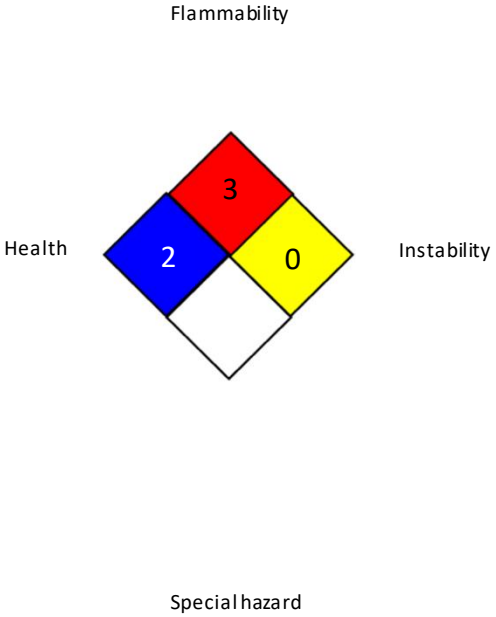
TSCA list
No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

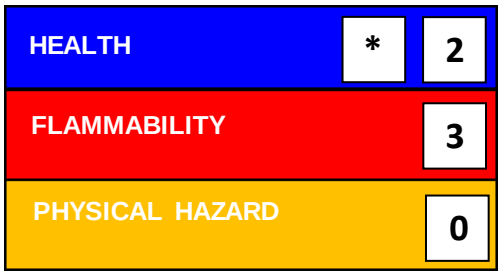
SECTION 16. OTHER INFORMATION

Further information

NFPA 704:



HMIS® IV / CED:



HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. The "*" represents a chronic hazard, while the "/" represents the absence of a chronic hazard.

Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
NIOSH REL	:	USA. NIOSH Recommended Exposure Limits
OSHA P0	:	USA. Table Z-1-A Limits for Air Contaminants (1989 vacated values)
OSHA Z-1	:	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
ACGIH / TWA	:	8-hour, time-weighted average
NIOSH REL / TWA	:	Time-weighted average concentration for up to a 10-hour workday during a 40-hour workweek
OSHA P0 / TWA	:	8-hour time weighted average
OSHA Z-1 / TWA	:	8-hour time weighted average

AIIC - Australian Inventory of Industrial Chemicals; ASTM - American Society for the Testing of Materials; bw - Body weight; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardization; DOT - Department of Transportation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; EHS - Extremely Hazardous Substance; ELx - Loading rate associated with x% response; EmS -

Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; HMIS - Hazardous Materials Identification System; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organization for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; MSHA - Mine Safety and Health Administration; n.o.s. - Not Otherwise Specified; NFPA - National Fire Protection Association; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; RCRA - Resource Conservation and Recovery Act; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorization and Restriction of Chemicals; RQ - Reportable Quantity; SADT - Self-Accelerating Decomposition Temperature; SARA - Superfund Amendments and Reauthorization Act; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TECI - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative

Revision Date : 09/02/2026

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN / 2510