

SAFETY DATA SHEET

United States

Section 1. Identification

Product name EDC; part of 'Thiol Coupling Kit'

Catalogue Number BR100557



Other means of identification Not available.

Product type Solid.

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

Identified uses

Analytical chemistry.
Laboratory chemicals
Scientific research and development
Consumer use

Supplier

Cytiva
Amersham Place
Little Chalfont
Buckinghamshire
HP7 9NA United Kingdom
+44 1494 508000

Cytiva USA
100 Results Way
Marlborough, MA 01752
1-800-526-3593

In case of emergency

INFOTRAC - 24 Hour number: 1-800-535-5053
Outside of the United States, call 24 Hour number: 001-352-323-3500 (Call Collect)

Section 2. Hazards identification

OSHA/HCS status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture

ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (dermal) - Category 3
SKIN IRRITATION - Category 2
SKIN SENSITIZATION - Category 1
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 1

GHS label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Harmful if swallowed.
Toxic in contact with skin.
Causes skin irritation.
May cause an allergic skin reaction.
Very toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention

Wear protective gloves and protective clothing. Avoid release to the environment. Avoid breathing dust. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace.



Response	Collect spillage. IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell. Rinse mouth. IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water. If skin irritation or rash occurs: Get medical advice or attention. Take off immediately all contaminated clothing and wash it before reuse.
Storage	Store locked up.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Hazards not otherwise classified	None known.
Hazards identified when used	No known significant effects or critical hazards.

Section 3. Composition/information on ingredients

Substance/mixture	Substance		
Other means of identification	Not available.		
Ingredient name	Synonyms	%	Identifiers
N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride	1,3-Propanediamine, N3-(ethylcarbonimidoyl)-N1,N1-dimethyl-, hydrochloride (1:1); 1,3-Propanediamine, N'-(ethylcarbonimidoyl)-N,N-dimethyl-, monohydrochloride; N-(3-Dimethylaminopropyl)-N'-ethylcarbodiimide hydro chloride; N-[3-(dimethylamino)propyl]-N'-ethylcarbodiimide hydrochloride; Carbodiimide, (3-dimethylaminopropyl)ethyl-, monohydrochloride; 1-Ethyl-3-(3'-dimethylaminopropyl)carbodiimide hydrochloride; N,N-Dimethyl (4,6-diazaocta-4,5-dien-1-yl)amine monohydrochloride; N3-(Ethylcarbonimidoyl)-N1,N1-dimethyl-1,3-propanediamine, hydrochloride (1:1); 3-(ethyliminomethylideneamino)-N,N-dimethylpropan-1-amine hydrochloride	100	CAS: 25952-53-8

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention. If necessary, call a poison center or physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.



Skin contact	Toxic in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
Ingestion	Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	No specific data.
Skin contact	Adverse symptoms may include the following: irritation redness
Ingestion	No specific data.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.
Specific hazards arising from the chemical	This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds
Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials for containment and cleaning up

Small spill	Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
Large spill	Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor.



Section 7. Handling and storage

Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	Do not store below the following temperature: 5°C (41°F). Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
N'-(ethylcarbamimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride	None.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls	Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
Environmental exposure controls	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures	Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
Eye/face protection	Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.
Skin protection	
Hand protection	Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.
Body protection	Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Other skin protection	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
Respiratory protection	Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.



Section 9. Physical and chemical properties

Appearance

Physical state	Solid.
Color	White.
Odor	Odorless.
Odor threshold	Not available.
pH	Not available.
Melting point/freezing point	Not available.
Boiling point or initial boiling point and boiling range	Not available.
Flash point	Not applicable.
Burning time	Not available.
Burning rate	Not available.
Evaporation rate	Not available.
Flammability	Not available.
Lower and upper explosive (flammable) limits	Not applicable.
Vapor pressure	Not available.
Relative vapor density	Not applicable.
Relative density	Not available.
Solubility in water	Not available.
Partition coefficient: n-octanol/ water	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	Not available.
SADT	Not available.
Viscosity	Dynamic (room temperature): Not available. Kinematic (room temperature): Not available. Kinematic (40°C (104°F)): Not available.
Flow time (ISO 2431)	Not available.

Particle characteristics

Median particle size	Not available.
----------------------	----------------

Section 10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	The product is stable.
Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	No specific data.
Incompatible materials	No specific data.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Not available.

Conclusion/Summary [Product]	Not available.
------------------------------	----------------

Skin corrosion/irritation

Not available.

Conclusion/Summary [Product]	Not available.
------------------------------	----------------

Serious eye damage/eye irritation

Not available.



Conclusion/Summary [Product]	Not available.
---	----------------

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product]	Not available.
---	----------------

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product]	Not available.
---	----------------

Respiratory

Conclusion/Summary [Product]	Not available.
---	----------------

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product]	Not available.
---	----------------

Carcinogenicity

Not available.

Conclusion/Summary [Product]	Not available.
---	----------------

Reproductive toxicity

Not available.

Conclusion/Summary [Product]	Not available.
---	----------------

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
---	--

Potential acute health effects

Eye contact	No known significant effects or critical hazards.
Inhalation	No known significant effects or critical hazards.
Skin contact	Toxic in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
Ingestion	Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain or irritation watering redness
Inhalation	No specific data.
Skin contact	Adverse symptoms may include the following: irritation redness
Ingestion	No specific data.

Delayed and immediate effects and also chronic effects from short and long term exposure**Short term exposure**

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Long term exposure

Potential immediate effects	Not available.
Potential delayed effects	Not available.

Potential chronic health effects

Not available.

Conclusion/Summary [Product]	Not available.
---	----------------

General	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
Carcinogenicity	No known significant effects or critical hazards.
Mutagenicity	No known significant effects or critical hazards.
Reproductive toxicity	No known significant effects or critical hazards.

Numerical measures of toxicity**Acute toxicity estimates**

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
EDC; part of 'Thiol Coupling Kit'	500	300.0	N/A	N/A	N/A
N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride	500	300	N/A	N/A	N/A

Section 12. Ecological information**Toxicity**

Not available.

Conclusion/Summary [Product]	Not available.
---	----------------

Persistence and degradability

Not available.

Bioaccumulative potential

Not available.

Mobility in soil

Soil/Water partition coefficient	Not available.
---	----------------

Other adverse effects	No known significant effects or critical hazards.
------------------------------	---













Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	TDG Classification	Mexico Classification
UN number	UN2811	UN2811	UN2811
UN proper shipping name	Toxic solid, organic, n.o.s. (N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride)	Toxic solid, organic, n.o.s. (N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride)	Toxic solid, organic, n.o.s. (N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride)
Transport hazard class(es)	6.1	6.1	6.1
	 	 	
Packing group	III	III	III
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes. The environmentally hazardous substance mark is not required.	Yes. The environmentally hazardous substance mark is not required.
Additional information	This product is not regulated as a marine pollutant when transported on inland waterways in sizes of ≤5 L or ≤5 kg or by road, rail, or inland air in non-bulk sizes, provided the packagings meet the general provisions of §§ 173.24 and 173.24a.	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.26-2.36 (Class 6), 2.7 (Marine pollutant mark). The marine pollutant mark is not required when transported by road or rail.	-
	ADR/RID	IMDG	IATA
UN number	UN2811	UN2811	UN2811
UN proper shipping name	Toxic solid, organic, n.o.s. (N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride)	Toxic solid, organic, n.o.s. (N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride)	Toxic solid, organic, n.o.s. (N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride)
Transport hazard class(es)	6.1	6.1	6.1
	 	 	
Packing group	III	III	III
Environmental hazards	Yes. The environmentally hazardous substance mark is not required.	Yes.	Yes. The environmentally hazardous substance mark is not required.
Additional information	The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg. Tunnel code (E)	The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.	The environmentally hazardous substance mark may appear if required by other transportation regulations.
Special precautions for user	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.		
Transport in bulk according to IMO instruments	Not available.		
	Proper shipping name	Not available.	



Section 15. Regulatory information

U.S. Federal regulations

TSCA 8(a) CDR Exempt/Partial exemption: Not determined

TSCA 12(b) - Chemical export notification

Not applicable.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)	Not listed
Clean Air Act Section 602 Class I Substances	Not listed
Clean Air Act Section 602 Class II Substances	Not listed
DEA List I Chemicals (Precursor Chemicals)	Not listed
DEA List II Chemicals (Essential Chemicals)	Not listed

SARA 302/304

Composition/information on ingredients

No products were found.

SARA 304 RQ Not applicable.

SARA 311/312

Classification	ACUTE TOXICITY (oral) - Category 4
	ACUTE TOXICITY (dermal) - Category 3
	SKIN IRRITATION - Category 2
	SKIN SENSITIZATION - Category 1

Composition/information on ingredients

Name	%	Classification
N'-(ethylcarbonimidoyl)-N,N-dimethylpropane-1,3-diamine monohydrochloride	100	ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (dermal) - Category 3 SKIN IRRITATION - Category 2 SKIN SENSITIZATION - Category 1

State regulations

Massachusetts	None of the components are listed.
New York	None of the components are listed.
New Jersey	None of the components are listed.
Pennsylvania	None of the components are listed.

California Prop. 65

This product does not require a Safe Harbor warning under California Prop. 65.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

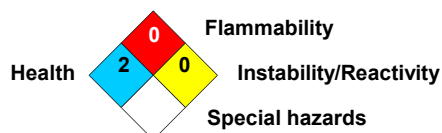
Inventory list

United States	All components are active or exempted.
Canada inventory	All components are listed or exempted.



Section 16. Other information

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Classification	Justification
ACUTE TOXICITY (oral) - Category 4	Calculation method
ACUTE TOXICITY (dermal) - Category 3	Calculation method
SKIN IRRITATION - Category 2	Calculation method
SKIN SENSITIZATION - Category 1	Calculation method
AQUATIC HAZARD (ACUTE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 1	Calculation method

History

Date of printing	2/12/2026
Date of issue/Date of revision	2/12/2026
Date of previous issue	2/5/2024
Version	12

sds_author@cytiva.com

Key to abbreviations

ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
UN = United Nations
Not available.

References

Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

