

SECTION 1 Identification

1.1. GHS Product identifier

Product form : Mixture
Trade name : K-Gold® PNPP Substrate
Type of product : Life Sciences -- [Life Sciences]
Product code : 303175

1.2. Other means of identification

Part Number(s) : 303175|303176|303177|303257|303171|303177-U| 303189

1.3. Recommended use of the chemical and restrictions on use

Use of the substance/mixture : Laboratory chemicals, Scientific research and development

1.4. Supplier's details

Neogen Corporation
620 Leshar Place
Lansing, Michigan 48912
United States of America
T 800.234.5333
sds@neogen.com - <https://www.neogen.com/>

1.5. Emergency phone number

Emergency number : 24 hours:
Medical: 1-800-498-5743 (U.S. and Canada) or 1-651-523-0318 (international)
Spill/CHEMTREC: 1-800-424-9300 (U.S. and Canada) or 1-703-527-3887 (international)

SECTION 2 Hazard identification

2.1. Classification of the substance or mixture

Classification (GHS CA)

Carcinogenicity, Category 2 H351 Suspected of causing cancer.
Full text of H statements : see section 16

2.2. GHS label elements, including precautionary statements

GHS CA labeling

Hazard pictograms (GHS CA) :



Signal word (GHS CA) : Warning

Hazard statements (GHS CA) : H351 - Suspected of causing cancer.

Precautionary statements (GHS CA) : P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P280 - Wear protective gloves, protective clothing, eye protection, face protection, and hearing protection.
P308+P313 - IF exposed or concerned: Get medical advice or attention.
P405 - Store locked up.

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P501 - Dispose of contents and/or container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulations.

2.3. Other hazards which do not result in classification

No additional information available

SECTION 3 Composition/information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Chemical name / Synonyms	Product identifier	%	Classification (GHS CA)
Diethanolamine	Diethanolamine 2,2'-aminodiethanol / 2,2'-dihydroxydiethylamine / 2,2'-imino-bis(ethanol) / 2,2'-iminodiethanol / amine, diethyl, 2,2-dihydroxy- / aminodiethanol / beta,beta'-dihydroxydiethylamine / bis(2-hydroxyethyl)amine / bis(beta-hydroxyethyl)amine / bis(hydroxyethyl)amine / DELA (=diethanolamine) / di(2-hydroxyethyl)amine / di-2-hydroxyethylamine / diethanolamine / diethylamine / dihydroxyethylamine / diolamine / ethanol, 2,2'-iminobis- / ethanol, 2,2'-iminodi- / iminodiethanol / N,N-bis(2-hydroxyethyl)amine / N,N-diethanolamine	CAS-No.: 111-42-2	≥ 0.5 – < 1	Acute Tox. 4 (Oral), H302 Skin Irrit. 2, H315 Eye Dam. 1, H318 Carc. 2, H351 STOT RE 1, H372 Aquatic Acute 2, H401 Aquatic Chronic 2, H411

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Full text of hazard classes and H-statements : see section 16

SECTION 4 First-aid measures

4.1. Description of necessary first-aid measures

First-aid measures after inhalation	: Remove person to fresh air and keep comfortable for breathing.
First-aid measures after skin contact	: Wash skin with plenty of water.
First-aid measures after eye contact	: Rinse eyes with water as a precaution.
First-aid measures after ingestion	: Call a poison center/doctor/physician if you feel unwell.
First-aid measures general	: IF exposed or concerned: Get medical advice/attention.
Personal protection for first-aid responders.	: First aid workers will be equipped with suitable personal protective equipment.

4.2. Most important symptoms/effects, acute and delayed

Symptoms/effects after inhalation	: None under normal conditions.
Symptoms/effects after skin contact	: None under normal conditions.
Symptoms/effects after eye contact	: None under normal conditions.
Symptoms/effects after ingestion	: None under normal conditions.

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

Other medical advice or treatment	: Treat symptomatically.
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SECTION 5 Fire-fighting measures

5.1. Suitable extinguishing media

Suitable extinguishing media	: Water spray. Dry powder. Foam. Carbon dioxide.
Unsuitable extinguishing media	: Do not use a heavy water stream.

5.2. Specific hazards arising from the chemical

Fire hazard	: No fire hazard.
Explosion hazard	: No direct explosion hazard.
Hazardous decomposition products in case of fire	: Toxic fumes may be released.

5.3. Special protective actions for fire-fighters

Firefighting instructions	: Fight fire from safe distance and protected location. Do not enter fire area without proper protective equipment, including respiratory protection.
Protection during firefighting	: Do not attempt to take action without suitable protective equipment. Self-contained breathing apparatus. Complete protective clothing.

SECTION 6 Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures	: Stop leak if safe to do so. Notify authorities if product enters sewers or public waters. Absorb spillage to prevent material-damage.
Environmental precautions	: Avoid release to the environment.

6.2. Methods and materials for containment and cleaning up

For containment	: Absorb spilled material with sand or earth. Contain any spills with dikes or absorbents to prevent migration and entry into sewers or streams. Stop leak, if possible without risk.
Methods for cleaning up	: Take up liquid spill into absorbent material. Notify authorities if product enters sewers or public waters.
Other information	: Dispose of materials or solid residues at an authorized site.

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For further information refer to section 13.

SECTION 7 Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Ensure good ventilation of the work station. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear personal protective equipment.
- Hygiene measures : Do not eat, drink or smoke when using this product. Always wash hands after handling the product.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Keep in a cool, well-ventilated place away from heat.
- Storage conditions : Store locked up.
- Packaging materials : Store always product in container of same material as original container.

SECTION 8 Exposure controls/personal protection

8.1. Control parameters

Diethanolamine (111-42-2)	
Canada (Alberta) - Occupational Exposure Limits	
Local name	Diethanolamine
OEL TWA	2 mg/m ³
Notations and remarks	Substance may be readily absorbed through intact skin.
Regulatory reference	Alberta Regulation 191/2021
Canada (Quebec) - Occupational Exposure Limits	
Local name	Diethanolamine (2,2'-Iminodiethanol)
VEMP (OEL TWAEV)	1 mg/m ³ IFV
Notations and remarks	C3, Pc
Regulatory reference	S-2.1, r. 13 - Regulation respecting occupational health and safety
Canada (British Columbia) - Occupational Exposure Limits	
Local name	Diethanolamine
OEL TWA	2 mg/m ³
Notations and remarks	Skin (the substance that contribute significantly to the overall exposure by the skin route); IARC group 2B carcinogen
Regulatory reference	OHS Guidelines Part 5: Chemical Agents and Biological Agents (WorkSafe BC)
Canada (Manitoba) - Occupational Exposure Limits	
Local name	Diethanolamine
OEL TWA	1 mg/m ³ (IFV - Inhalable fraction and vapor) 0.2 ppm (IFV - Inhalable fraction and vapor)
Notations and remarks	TLV® Basis: Liver & kidney dam. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2025

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Diethanolamine (111-42-2)	
Canada (Newfoundland and Labrador) - Occupational Exposure Limits	
Local name	Diethanolamine
OEL TWA	1 mg/m ³ (IFV - Inhalable fraction and vapor)
	0.2 ppm (IFV - Inhalable fraction and vapor)
Notations and remarks	TLV® Basis: Liver & kidney dam. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2025
Canada (Nova Scotia) - Occupational Exposure Limits	
Local name	Diethanolamine
OEL TWA	1 mg/m ³ (IFV - Inhalable fraction and vapor)
	0.2 ppm (IFV - Inhalable fraction and vapor)
Notations and remarks	TLV® Basis: Liver & kidney dam. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)
Regulatory reference	ACGIH 2025
Canada (Nunavut) - Occupational Exposure Limits	
Local name	Diethanolamine
OEL TWA	2 mg/m ³
OEL STEL	4 mg/m ³
Notations and remarks	Skin
Regulatory reference	Occupational Health and Safety Regulations, Nu Reg 003-2016 (Amendment R-044-2021)
Canada (Northwest Territories) - Occupational Exposure Limits	
Local name	Diethanolamine
OEL TWA	2 mg/m ³
OEL STEL	4 mg/m ³
Notations and remarks	Skin
Regulatory reference	Occupation Health and Safety Regulations R-039-2015 (R-090-2024)
Canada (Ontario) - Occupational Exposure Limits	
Local name	Diethanolamine
OEL TWAEV	1 mg/m ³ (IFV - Inhalable fraction and vapour)
Notations and remarks	Skin
Regulatory reference	Occupational Health and Safety Act, R.S.O. 1990, c. O.1 - R.R.O. 1990, Reg. 833: Control of exposure to biological or chemical agents
Canada (Prince Edward Island) - Occupational Exposure Limits	
Local name	Diethanolamine
OEL TWA	1 mg/m ³ (IFV - Inhalable fraction and vapor)
	0.2 ppm (IFV - Inhalable fraction and vapor)
Notations and remarks	TLV® Basis: Liver & kidney dam. Notations: Skin; A3 (Confirmed Animal Carcinogen with Unknown Relevance to Humans)

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Diethanolamine (111-42-2)	
Regulatory reference	ACGIH 2025
Canada (Saskatchewan) - Occupational Exposure Limits	
Local name	Diethanolamine
OEL TWA	2 mg/m ³
OEL STEL	4 mg/m ³
Notations and remarks	Skin
Regulatory reference	The Occupational Health and Safety Regulations, 2020. Chapter S-15.1 Reg 10

8.2. Appropriate engineering controls

Appropriate engineering controls : Ensure good ventilation of the work station.
Environmental exposure controls : Avoid release to the environment.

8.3. Individual protection measures, such as personal protective equipment (PPE)

Personal protective equipment:

Wear recommended personal protective equipment.

Hand protection:

Protective gloves

Eye protection:

Safety glasses

Skin and body protection:

Wear suitable protective clothing

Respiratory protection:

In case of insufficient ventilation, wear suitable respiratory equipment

Personal protective equipment symbol(s):



SECTION 9 Physical and chemical properties

9.1. Basic physical and chemical properties

Physical state : Liquid
Appearance : No data available
Color : Clear Light yellow
Odor : Odorless Slight
Odor threshold : No data available
pH : 9.2 – 9.6
Relative evaporation rate (butyl acetate=1) : No data available
Relative evaporation rate (ether=1) : No data available

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Melting point	: Not applicable
Freezing point	: No data available
Boiling point	: No data available
Flash point	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: Not applicable
Vapor pressure	: No data available
Relative vapor density at 20°C	: No data available
Relative density	: No data available
Solubility	: Soluble in water.
Partition coefficient n-octanol/water (Log Pow)	: No data available
Viscosity, kinematic	: No data available
Explosion limits	: No data available
Particle characteristics	: No data available

9.2. Data relevant with regard to physical hazard classes (supplemental)

No additional information available

SECTION 10 Stability and reactivity

Reactivity	: The product is non-reactive under normal conditions of use, storage and transport.
Chemical stability	: Stable under normal conditions.
Possibility of hazardous reactions	: No dangerous reactions known under normal conditions of use.
Conditions to avoid	: None under recommended storage and handling conditions (see section 7).
Incompatible materials	: No additional information available
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.
Hardening time:	: No additional information available

SECTION 11 Toxicological information

11.1. Likely routes of exposure

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

Diethanolamine (111-42-2)	
LD50 oral rat	1600 mg/kg body weight (Equivalent or similar to OECD 401, Rat, Male / female, Experimental value, Oral, 14 day(s))
LD50 oral	2300 mg/kg
LD50 dermal	13000 mg/kg
ATE CA (oral)	1600 mg/kg body weight
ATE CA (Dermal)	13000 mg/kg body weight

Skin corrosion/irritation	: Not classified pH: 9.2 – 9.6
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Diethanolamine (111-42-2)	
pH	11 (53 g/l)

Serious eye damage/irritation	: Not classified pH: 9.2 – 9.6
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Diethanolamine (111-42-2)	
pH	11 (53 g/l)

Respiratory or skin sensitization : Not classified
Germ cell mutagenicity : Not classified
Carcinogenicity : Suspected of causing cancer.

Diethanolamine (111-42-2)	
NOAEL (chronic,oral,animal/male,2 years)	64 mg/kg body weight Animal: rat, Animal sex: male, Guideline: OECD Guideline 451 (Carcinogenicity Studies)
IARC group	2B - Possibly carcinogenic to humans

Reproductive toxicity : Not classified
STOT-single exposure : Not classified
STOT-repeated exposure : Not classified

Diethanolamine (111-42-2)	
LOAEL (dermal, rat/rabbit, 90 days)	32 mg/kg body weight Animal: rat, Guideline: OECD Guideline 411 (Subchronic Dermal Toxicity: 90-Day Study)
NOAEC (inhalation, rat, dust/mist/fume, 90 days)	0.003 mg/l air Animal: rat, Guideline: OECD Guideline 413 (Subchronic Inhalation Toxicity: 90-Day Study)
STOT-repeated exposure	Causes damage to organs through prolonged or repeated exposure.

Aspiration hazard : Not classified

Diethanolamine (111-42-2)	
Viscosity, kinematic	357.967 mm ² /s

Symptoms/effects after inhalation : None under normal conditions.
Symptoms/effects after skin contact : None under normal conditions.
Symptoms/effects after eye contact : None under normal conditions.
Symptoms/effects after ingestion : None under normal conditions.

SECTION 12 Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
Hazardous to the aquatic environment, short-term (acute) : Not classified.
Hazardous to the aquatic environment, long-term (chronic) : Not classified.

Diethanolamine (111-42-2)	
LC50 - Fish [1]	460 mg/l (96 h, Oncorhynchus mykiss, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 - Crustacea [1]	30.1 – 89.9 mg/l (ASTM E729-80, 48 h, Ceriodaphnia dubia, Static system, Fresh water, Experimental value, Locomotor effect)
EC50 - Crustacea [2]	89.9 mg/l Test organisms (species): Ceriodaphnia dubia
ErC50 algae	9.5 mg/l (EPA 600/9-78-018, 72 h, Pseudokirchneriella subcapitata, Static system, Fresh water, Experimental value, Nominal concentration)
EC50 72h - Algae [1]	9.5 mg/l Source: ECHA
NOEC (chronic)	0.78 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

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Diethanolamine (111-42-2)	
NOEC chronic crustacea	0.78 mg/l
LOEC (chronic)	1.56 mg/l Test organisms (species): Daphnia magna Duration: '21 d'

12.2. Persistence and degradability

K-Gold® PNPP Substrate	
Persistence and degradability	Not rapidly degradable

Diethanolamine (111-42-2)	
Persistence and degradability	Biodegradable in the soil, Readily biodegradable in water.
Biochemical oxygen demand (BOD)	0.22 g O ₂ /g substance
Chemical oxygen demand (COD)	1.52 g O ₂ /g substance
ThOD	2.13 g O ₂ /g substance

12.3. Bioaccumulative potential

Diethanolamine (111-42-2)	
Bioaccumulative potential	Not bioaccumulative.
BCF - Fish [1]	3.162 l/kg (BCFBAF v3.01, Estimated value, Fresh weight)
Partition coefficient n-octanol/water (Log Pow)	-2.18 – -1.43 (Experimental value)

12.4. Mobility in soil

Diethanolamine (111-42-2)	
Mobility in soil	1 – 10 Source: ECHA
Ecology - soil	Highly mobile in soil.
Organic Carbon Normalized Adsorption Coefficient (Log Koc)	0.98 – 1 (log Koc, Calculated value)

12.5. Other adverse effects

Ozone : Not classified

Fluorinated greenhouse gases : No

SECTION 13 Disposal considerations

Regional waste regulation : Disposal must be done according to official regulations.
Waste treatment methods : Dispose of contents/container in accordance with licensed collector's sorting instructions.
Sewage disposal recommendations : Disposal must be done according to official regulations.
Product/Packaging disposal recommendations : Disposal must be done according to official regulations.
Additional information : Do not re-use empty containers.

SECTION 14 Transport information

In accordance with TDG / DOT / IMDG / IATA

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TDG	DOT	IMDG	IATA
14.1. UN Number			
Not regulated for transport			
14.2. UN Proper Shipping Name			
Not regulated	Not regulated	Not regulated	Not regulated
14.3. Transport hazard class(es)			
Not regulated	Not regulated	Not regulated	Not regulated
14.4. Packing group, if applicable			
Not regulated	Not regulated	Not regulated	Not regulated
14.5. Environmental hazards			
Not regulated	Not regulated	Not regulated	Not regulated
No supplementary information available			

14.6. Special precautions for user

TDG

Not regulated

DOT

Not regulated

IMDG

Not regulated

IATA

Not regulated

14.7. Transport in bulk according to Annex II of MARPOL 73/78⁹ and the IBC Code¹⁰

Not applicable

SECTION 15 Regulatory information

Diethanolamine (111-42-2)

Listed on the Canadian DSL (Domestic Substances List)

Canada DSL & NDSL Flags

Significant New Activity (SNAc) provisions of the Act apply

Diethanolamine (111-42-2)

Listed on the United States TSCA (Toxic Substances Control Act) inventory - Status: Active

Listed on INSQ (Mexican National Inventory of Chemical Substances)

SECTION 16 Other Information

Issue date : 09-09-2025

Full text of hazard classes and H-statements:

H302 Harmful if swallowed

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Full text of hazard classes and H-statements:	
H315	Causes skin irritation
H318	Causes serious eye damage
H351	Suspected of causing cancer.
H372	Causes damage to organs through prolonged or repeated exposure.
H401	Toxic to aquatic life
H411	Toxic to aquatic life with long lasting effects

Safety Data Sheet (SDS), Canada

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.