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Revision: 30 October 2024 Version number: 1.0

SECTION 1: Identification of the substance/mixture and company/undertaking

1.1 Product identifier

EValuator CD9 reagent (fluorescent detection 488)
Product Catalog Number : HAK-CD9-F488-1

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

For laboratory research use only.
Uses advised against: not available.

1.3 Details of the supplier of the safety data sheet

Hakarel, Inc.
7-7-18 Saito-asagi, Ibaraki-shi, 567-0085 Japan
Telephone/Fax: +81-72-657-9980
Email address: info@hakarel.com
Web: www.hakarel.com

1.4 Emergency telephone number

+81-72-657-9980

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SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to CLP Regulation (1272/2008). Skin Sens 1A, H317; Aquatic Chronic 3,

See Section 16 'Other information' for full text of the H-statements.

2.2 Label elements

Signal word: Warning

Hazard statements:
H317: May cause an allergic skin reaction.
H412: Harmful to aquatic life with long lasting effects.

Precautionary statements

- prevention: P280: Wear protective gloves.
- response: P302 + P352: IF ON SKIN: Wash with plenty of soap and water.
- storage: None.
- disposal: None.

Supplemental information: Not available.

2.3 Other hazards

This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/information on ingredients

3.2 Mixtures [a]

Declarable components	*Conc. (wt%)*	*EC No.*	*CAS No.*	*REACH Reg. No.*	*Classification, supplemental hazards, ATE, M-factor, and SCL*
Albumins, blood serum (BSA)	Ca. 0.5	232-936-2	9048-46-8	NA	Acute Tox 4, H302
Mixture of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3 one (3:1)	< 0.0025	611-341-5	55965-84-9	NA	Acute Tox 3, H301; Acute Tox 2, H310; Acute Tox 2, H330; Skin Corr 1C, H314; Eye Dam 1, H318; Skin Sens 1A, H317; Aquatic Acute 1, H400 (M = 100); Aquatic Chronic 1, H410 (M = 100); EUH071; SCL: Skin Sens 1, H317 C ≥ 0.0015%
Other components					
Water	40–50	231-791-2	7732-18-5	NA	Not classified
Glycerol	Ca. 50	200-289-5	56-81-5	NA	Not classified

[a] NA: not available.

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SECTION 4: First aid measures

4.1 Description of first aid measures

Inhalation	Remove exposed person to fresh air and keep warm and at rest in a position comfortable for breathing.
Skin	Remove contaminated clothing and wash affected area with soap and water. If skin irritation or rash occurs: Get medical attention. Take off contaminated clothing and wash it before reuse.
Eye	In case of contact with eyes, irrigate with room-temperature water or eyewash solution for several minutes, occasionally lifting eyelids.
Ingestion	If swallowed, rinse mouth thoroughly and give water to drink.

4.2 Most important symptoms and effects, both acute and delayed — May cause an allergic skin reaction.

4.3 Indication of any immediate medical attention and special treatment needed — Treat symptoms as they occur.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable	Use extinguishing media appropriate to cause of the fire, and the surroundings. Water spray, carbon dioxide and dry-chemical powder are suitable.
Unsuitable	Not available.

5.2 Special hazards arising from the substance or mixture — The product is an aqueous solution, and is not classified as flammable.

5.3 Advice for firefighters — Fire fighters should wear an approved self-contained breathing apparatus and full protective clothing.

Section 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures — Wear personal protection (see Section 8). Product is supplied very small volumes (< 1 mL) in a plastic vial, and does not pose a health or environmental hazard during foreseeable use.

Follow prescribed procedures for responding to large spills.

6.2 Environmental precautions — No environmental hazard from foreseen use.

For large spills, prevent product from entering water courses or drainage system by absorption with inert material.

6.3	**Methods and material for containment and cleaning up**	Clean up spill as soon as possible. Collect plastic vials. For small quantities of spilt product, wipe off with cloth or paper. For larger quantities, absorb with an inert material such as cloth, or sand. Wash contaminated surfaces with water and detergent, and collect waste, washings, and contaminated materials for safe disposal.
6.4	**Reference to other sections**	For recommended personal protective equipment, see Section 8. For disposal considerations, see Section 13.

SECTION 7: Handling and storage

7.1	**Precautions for safe handling**	Avoid skin and eye contact. Avoid breathing spray. Use protective measures described in Section 8. Use only in a well-ventilated area. Wash hands after use.
7.2	**Conditions for safe storage, including any incompatibilities**	Store at –20 °C. Keep container tightly closed, and in well-ventilated area.
7.3	**Specific end use(s)**	Not available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

EU limit values: None.

National limit values:

UK: Glycerol, mist: 8 h TWA, 10 mg/m^3.

Austria: 5-chloro-2-methyl-2,3-dihydroisothiazol-3 one and 2-methyl-2,3-dihydroisothiazol-3 one: 8 h TWA, 0.05 mg/m^3.

Belgium: Glycerol, mist: 8 h TWA, 10 mg/m^3.

Finland: Glycerol, mist: 8 h TWA, 20 mg/m^3.

France: Glycerol, mist: 8 h TWA, 10 mg/m^3.

Germany (inhalable fraction): Glycerol, mist: 8 h TWA, 200 mg/m^3; 15 min, 400 mg/m^3 (AGS and DFG). 5-chloro-2-methyl-2,3-dihydroisothiazol-3 one and 2-methyl-2,3-dihydroisothiazol-3 one (inhalable fraction): 8 h TWA, 0.2 mg/m^3; 15 min, 0.4 mg/m^3 (DFG).

Netherlands: Glycerol, mist: 8 h TWA, 10 mg/m^3.

Poland: Glycerol, mist: 8 h TWA, 10 mg/m^3.

Spain: Glycerol, mist: 8 h TWA, 10 mg/m^3.

Switzerland: 5-chloro-2-methyl-2,3-dihydroisothiazol-3 one and 2-methyl-2,3-dihydroisothiazol-3 one (inhalable fraction): 8 h TWA, 0.2 mg/m^3; 15 min, 0.4 mg/m^3.

Czech Republic, Denmark, Hungary, Italy, Lithuania, Norway, Slovakia, Sweden: not available.

Monitoring procedure: BS EN 14042:2003; Workplace Atmospheres; Guide for the Application

	and Use of Procedures for the Assessment of Exposure to Chemical and Biological Agents, or other national equivalent.
Other: human health (DNELs, DMELs)	*Reaction mass of 2-methyl-2H-isothiazol-3-one and 5-chloro-2-methyl-2H-isothiazol-3-one*: DNEL: workers, long-term exposure, local effects, inhalation, 0.02 mg/m^3; workers, short-term exposure, local effects, inhalation, 0.04 mg/m^3. *Glycerol*: DNEL: workers, long-term exposure, local effects, inhalation, 56 mg/m^3.
Other: environmental (PNEC)	*Reaction mass of 2-methyl-2H-isothiazol-3-one and 5-chloro-2-methyl-2H-isothiazol-3-one*: PNECs: freshwater, 0.0034 mg/L; sewage treatment plant, 0.23 mg/L; freshwater sediment, 0.027 mg/kg dry sediment; soil, 0.01 mg/kg dry soil. *Glycerol*: PNEC: freshwater, 0.885 mg/L; sewage treatment plant, 1000 mg/L; freshwater sediment, 3.3 mg/kg dry sediment; soil, 0.141 mg/kg dry soil.

8.2 Exposure controls

Engineering controls	Use in a fume hood or in areas with good general ventilation.
Personal protective equipment	The need for personal protective equipment should be based on a workplace risk assessment for the particular use. Follow good laboratory hygiene practices when handling this product. Wear chemical resistant glasses, chemical resistant gloves (eg rubber or PVC), and protective clothing (eg laboratory coat). PPE should be to European (EN) standards. Consult manufacturers concerning breakthrough times.
Environmental exposure controls	Not available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

(a)	Physical state	Liquid
(b)	Colour	Pale gold, clear
(c)	Odour	Odorless
(d)	Melting/freezing point	0 °C for water; 18 °C for glycerol
(e)	Boiling point or initial boiling point and boiling range	100 °C for water; 290 °C for glycerol
(f)	Flammability	Water-based liquid not classified as flammable
(g)	Lower and upper explosion limit	Not available
(h)	Flash point	Not available; 204 °C (Cleveland open cup) for glycerol
(i)	Auto-ignition temp.	Not available; 370 °C for glycerol
(j)	Decomposition temp.	Not available
(k)	pH	Not available

(l)	Kinematic viscosity	Not available
(m)	Solubility	Freely soluble in water
(n)	Partition Coeff. n-octanol/water (log value)	Not available; –1.75 for glycerol
(o)	Vapour pressure	2310 Pa at 20 °C for water; below 0.001 mmHg at room temperature and below 0.2 mmHg at 100 °C for glycerol
(p)	Density or rel. density	Ca. 1.1
(q)	Relative vapour density	Not available
(r)	Particle characteristics	Not available

9.2 Other information Not expected to meet the criteria for classification as explosive or oxidising

SECTION 10: Stability and reactivity

10.1 Reactivity Not available.

10.2 Chemical stability Stable under ambient conditions.

10.3 Possibility of hazardous reactions Not available.

10.4 Conditions to avoid Avoid storage at temperatures above –20 °C.

10.5 Incompatible materials Not available.

10.6 Hazardous decomposition products Not available.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

(a)	Acute toxicity	Based on available data, the classification criteria are not met. ATE_{mix} (oral) > 2000 mg/kg; ATE_{mix} (dermal) > 2000 mg/kg; ATE_{mix} (inhalation, mist) > 5 mg/L. Glycerol: LD_{50} (oral; rat), 27 200 mg/kg; LC_{50} (inhalation; rat; 1 h), > 11 mg/L; LD_{50} (dermal; guinea pig), 56 750 mg/kg.
(b)	Skin corrosion/irritation	Based on available data, the classification criteria are not met. Glycerol: not irritating (rabbit test).
(c)	Serious eye damage/irritation	Based on available data, the classification criteria are not met. Glycerol: not irritating (rabbit test).
(d)	Respiratory or skin sensitisation	Skin sensitisation: based on available data, the classification criteria are met for Skin Sensitisation Category 1A (may cause an allergic skin reaction). Mixture of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1): strong sensitiser (mouse local lymph node assay); specific concentration limits causing hazard classification for skin sensitisation at C ≥ 0.0015%.

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(e)	Germ cell mutagenicity	Based on available data, the classification criteria are not met.
(f)	Carcinogenicity	Based on available data, the classification criteria are not met.
(g)	Reproductive toxicity	Based on available data, the classification criteria are not met.
(h)	STOT-single exposure	Based on available data, the classification criteria are not met.
(i)	STOT-repeated exposure	Based on available data, the classification criteria are not met.
(j)	Aspiration hazard	Based on available data, the classification criteria are not met.

11.2 Information on other hazards: This product does not contain any known or suspected endocrine disruptors.

SECTION 12: Ecological information

12.1 Toxicity

Based on available data, the classification criteria are met for Category 3 (harmful to aquatic life with long lasting effects).

Mixture of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1): LC_{50} (fish, 96 h), 0.09 to 0.28 mg/L (NOEC, 0.02 to 0.098 mg/L); EC_{50} (Daphnia magna, 48 h), 0.10 to 0.16 (NOEC, 0.0036 to 0.1 mg/L); EC_{50} (algae, 72 h), 0.011 to 0.054 mg/L (NOEC, 0.001 to 0.005 mg/L).

Glycerol: LC_{50} (fish, 96 h), 54 000 mg/L; EC_{50} (Daphnia magna, 48 h), 1955 mg/L).

12.2 Persistence and degradability

Mixture of 5-chloro-2-methyl-4-isothiazolin-3-one and 2-methyl-2H-isothiazol-3-one (3:1): not meeting criteria for readily biodegradability in screening test, although significant biodegradation occurred.

Glycerol: readily biodegradable.

12.3 Bioaccumulative potential: Not available.

12.4 Mobility in soil: Not available.

12.5 Results of PBT and vPvB assessment: No ingredient classified as PBT or vPvB.

12.6 Endocrine disrupting properties: No ingredient classified for endocrine disrupting properties.

12.7 Other adverse effects: Not classified as hazardous to the ozone layer.

SECTION 13: Disposal considerations

13.1 Waste treatment methods: Incineration is recommended for large quantities of this product. Disposal via the drains or landfill may be suitable for small amounts after dilution. Disposal must be in accordance with current national and local regulations. Chemical residues generally count as special waste. General EU requirements are given in Directive 2008/98/EC.

SECTION 14: Transport information

14.1 UN Number: Not classified as dangerous goods for transport.

14.2 UN proper shipping name	Not applicable.
14.3 Transport hazard class(es)	Not applicable.
14.4 Packing group	Not applicable.
14.5 Environmental hazards	Not classified as marine pollutant/environmentally hazardous.
14.6 Special precautions for user	Not available.
14.7 Maritime transport in bulk according to IMO instruments	Not applicable.

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

UK: Control of Substances Hazardous to Health Regulations 2002 (COSHH), as amended (also implementing 90/394/EEC on carcinogens at work). Workplace Exposure Limits EH40/2005 (Second edition, with 2013 amendments); Health and Safety Executive.

EU: Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work (as amended). EU Indicative Occupational Exposure Limit Values (IOELVs): Commission Directive 2000/39/EC (as amended).

Austria: Occupational exposure limits: Verordnung des Bundesministers für Wirtschaft und Arbeit über Grenzwerte für Arbeitsstoffe und über krebserzeugende Arbeitsstoffe (Grenzwerteverordnung 2007 - GKV 2007).

Belgium: Occupational exposure limits: Valeurs Limites d'Exposition Professionnelle (VLEP); or Grenswaarden voor Beroepsmatige Blootstelling (GWBB).

Czech Republic: List of Chemical Substances and their Permissible Exposure Limits (PELs) and Maximum Allowable Concentrations (NPK-P).

Denmark: Occupational exposure limits: Bekendtgørelse om grænseværdier for stoffer og materialer.

Finland: Occupational exposure limits: HTP-ARVOT 2018; Haitallisiksi tunnetut pitoisuudet.

France: Occupational exposure limits: Valeurs limites d'exposition professionelle aux agents chimiques en France; Document ED 984.

Germany: Germany: WGK (Wassergefährdungsklassen) Regulation: Verwaltungsvorschrift wassergefährdende Stoffe (VwVwS), designating water hazard classes. Product WGK, 1 (self-classification).
Occupational exposure limits: Technische Regeln für Gefahrstoffe (TRGS) 900; Arbeitsplatzgrenzwerte (AGW); revision 4 November 2016. List of MAK and BAT Values 2019; Report 55; Deutsche Forschungsgemeinschaft.

Hungary: Occupational exposure limits: 5/2020. (II. 6.) ITM rendelet a kémiai kóroki tényezők hatásának kitett munkavállalók egészségének és biztonságának védelméről.

Italy: Occupational exposure limits: Decreto Ministeriale 26/02/04. Definizione di una prima lista di valori limite indicativi di esposizione professionale agli agenti chimici.

Lithuania: Occupational exposure limits: Hygiene Norm HN 23:2011.

Netherlands: Occupational exposure limits, see: https://www.ser.nl/nl/thema/arbeidsomstandigheden/Grenswaarden-gevaarlijke-stoffen/Grenswaarden

Norway: Occupational exposure limits: Regulations concerning Action and Limit values; 11/2/22; Norwegian Labour Inspection Authority (Arbeidstilsynet).

Poland: Act of 11.01.2001 on chemical substances and preparations (Journal of Laws No. 11 p. 84), as amended. Occupational exposure limits: The Ordinance of the Minister of Labour and Social Policy on the Maximum Admissible Concentrations and Intensities of Harmful to Health Agents in the Working Environment. DZIENNIK USTAW 2002, NO 217, ITEM 1833.

Slovakia: Act No 124/2006 on health and safety at work and amending certain acts (o bezpečnosti a ochrane zdravia pri práci a o zmene a doplnení niektorých zákonov).

Spain: Occupational exposure limits: Límites de Exposición Profesional Para Agentes Químicos En España 2016; Instituto Nacional de Seguridad e Higiene en el Trabajo (INSHT).

Sweden: Occupational exposure limits: AFS 2018:1; Hygieniska gränsvärden; Arbetsmiljöverkets föreskrifter och allmänna råd om hygieniska gränsvärden; 13 februari 2018.

Switzerland: Occupational exposure limits: Verordnung über die Verhütung von Unfällen und Berufskrankheiten (VUV)", Art. 50 Abs. 3.

15.2 Chemical safety assessment Not available.

SECTION 16: Other information

Revisions	This version 1.0 is formatted according to EU Regulation 2020/878.
Abbreviations	DNEL, derived no-effect level; EC, effect concentration; LC, lethal concentration; LD, lethal dose; NOEC, no-observed-effect-concentration; NOEL, no-observed-effect level; PBT, persistent, bio accumulative, and toxic; PNEC, predicted no-effect concentration; SCL, specific concentration limit; TWA, time-weighted average; vPvB, very persistent, very bioaccumulative; WEL, UK workplace exposure limit.
References	Search for chemicals; available at the European Chemicals Agency website: http://echa.europa.eu/.

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Basis of classification	The mixture is classified on the basis of available information on the ingredients.
List of hazard statements	H301 - Toxic if swallowed H310 - Fatal in contact with skin H314 - Causes severe skin burns and eye damage H330 - Fatal if inhaled H317 - May cause an allergic skin reaction H318 - Causes serious eye damage H400 - Very toxic to aquatic life H410 - Very toxic to aquatic life with long lasting effects H412 - Harmful to aquatic life with long lasting effects EUH071 - Corrosive to the respiratory tract

Disclaimer: The above information is believed to be correct but is only to be used as a guide for experienced personnel. Hakarel Inc. shall not be liable for any damage resulting from the handling of or contact with the above product.