

Material Safety Data Sheet

according to EC-Regulation No. 1272/2008

updated: 02/2016

Version: 1.0

Section I - Product and Company Information

Product Name	Glutathione Detection Kit I
Product Number	PK-CA577-K261
Product Classification	Cell Biology Reagents
Company and Contact Information	PromoCell GmbH Sickingenstrasse 63/65 69126 Heidelberg Germany Phone: +49 6221 – 649 34 0 E-mail: info@promokine.info

Section II – Composition/Information on Ingredients

Component	CAS Number	EC-No.	MW	Chemical Formula
Ethanol	64-17-5	200-578-6	46.07	C ₂ H ₆ O
5,5'- Dithiobis(2-nitrobenzoic acid) [DTNB]	69-78-3	200-714-4	396.35	C ₁₄ H ₈ N ₂ O ₈ S ₂
Sulfosalicylic Acid (SSA)	5965-83-3	202-555-6	254.21	C ₇ H ₆ O ₆ S · 2H ₂ O

Section III – Hazard Information

Component	Description	Volume	Safety Information
Glutathione Reaction Buffer	Proprietary Buffer	100 ml	No hazards
Glutathione Substrate (DTNB)	In Ethanol	2 vials	See below
NADPH Generating Mix	Lyophilized	2 vials	No hazards
Glutathione Reductase	Lyophilized	2 vials	No hazards
Sulfosalicylic Acid (SSA)	Solid	1 bottle (1 g)	See below
GSH Standard (MW: 307)	Lyophilized	2 x 1mg	No hazards

Ethanol:

Emergency Overview

OSHA Hazards: Combustible liquid, Target organ effect, Irritant, Carcinogen

Target Organs: Nerves, Liver, Heart

GHS Classification: Flammable liquids (Category 3)

Skin irritation (Category 2)

Eye irritation (Category 2B)

Specific target organ toxicity – single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram:



Signal word: Warning

Hazard statement(s): H226 Flammable liquid and vapor.

H302: Harmful if swallowed

H315+H320 Causes skin and eye irritation.

H335 May cause respiratory irritation.

Precautionary statement(s): P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

HMIS Classification

Health hazard: 2

Chronic health hazard: *

Flammability: 2

Physical hazards: 0

NFPA Rating

Health Hazard: 2

Fire: 2

Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

DTNB:

Emergency Overview

OSHA Hazards: Irritant

GHS Classification: Skin irritation (Category 2)

Eye irritation (Category 2A)

Specific target organ toxicity – single exposure (Category 3)

GHS Label elements, including precautionary statements

Pictogram:



Signal word: Warning

Hazard statement(s): H315 Causes skin irritation.

H319 Causes serious eye irritation.

H335 May cause respiratory irritation.

Precautionary statement(s): P261 Avoid breathing dust/fumes/gas/mist/vapors/spray.

P264 Wash hands thoroughly after handling.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P302+P352 IF ON SKIN: Wash with plenty of soap and water.

P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P332+P313 If skin irritation occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

HMIS Classification

Health hazard: 2

Flammability: 0

Physical hazards: 0

NFPA Rating

Health Hazard: 2

Fire: 0

Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

Sulfosalicylic Acid:

Emergency Overview

OSHA Hazards: Irritant

GHS Classification: Skin corrosion/ irritation (Category 1B)

Serious Eye Damage/Eye Irritation (Category 1)

GHS Label elements, including precautionary statements

Pictogram:



Signal word: danger

Hazard statement(s): Harmful if swallowed

Causes severe skin burns and eye damage

Precautionary statement(s) Wear protective gloves/protective clothing/eye protection/face protection

Do not breathe dust/fume/gas/mist/vapors/spray

Wash face, hands and any exposed skin thoroughly after handling

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If skin irritation occurs: Get medical advice/attention.

If eye irritation persists: Get medical advice/attention.

HMIS Classification

Health hazard: 3

Flammability: 0

Physical hazards: 0

NFPA Rating

Health Hazard: 3

Fire: 0

Reactivity Hazard: 0

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

Section IV – First Aid Measures

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

If inhaled: If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact: Wash off with soap and plenty of water. Consult a physician.

In case of eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed: DO NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

Section V – Fire-Fighting Measures

Ethanol:

Suitable extinguishing media: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for firefighters: Wear self-contained breathing apparatus for firefighting if necessary.

Hazardous combustion products: Hazardous decomposition products formed under fire conditions – see section 10

Further information: Flammable in the presence of a source of ignition when the temperature is above the flash point. Keep away from heat/sparks/open flame/hot surface. No smoking. Use water spray to cool unopened containers.

Section VI – Accidental Release Measures

Personal precautions: Use personal protective equipment. Avoid breathing vapors, mist, or gas. Ensure adequate ventilation. Remove all sources of ignition. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.

Environmental precautions: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

Methods for cleaning up: Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations.

Section VII – Handling and Storage

Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Keep away from sources of ignition – no smoking. Take measures to prevent the build up of electrostatic charge.

Conditions for safe storage

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.

Recommended storage temperature: -20 °C

Section VIII – Exposure Controls/Personal Protection

Ethanol:

Components	CAS-No.	Value	Control parameters	Basis
Ethanol	64-17-5	TWA	1,000 ppm	USA. ACGIH Threshold Limit Values (TLV)
Remarks:	Upper respiratory tract irritation. Confirmed animal carcinogen with unknown relevance to humans.			
		TWA	1,000 ppm 1,900 mg/m ³	USA. OSHA: TABLE Z-1 Limits for Air Contaminants – 1910.1000
		TWA	1,000 ppm 1,900 mg/m ³	USA. Occupational Exposure Limits (OSHA): Table Z-1 Limits for Air Contaminants
	The value in mg/m ³ is approximate.			
		TWA	1,000 ppm 1,900 mg/m ³	USA. NIOSH recommended exposure limits

DTNB & SSA:

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Eye protection

Tightly fitting safety goggles. Face shield (8-inch minimum). Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin and body protection

Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Section IX – Physical and Chemical Properties

Property	Ethanol	DTNB	SSA
Appearance:	Clear liquid	Light yellow powder	Crystalline solid
pH:	No data available	No data available	No data available
Water Solubility:	Completely soluble	No data available	Soluble
Other Solubility:	No data available	No data available	No data available
Boiling Point (°C):	78-80 °C (172.4-176 °F)	No data available	No data available
Melting Point (°C):	-144 °C (-227.2 °F)	240-250 °C (464-473 °F)	105-100 °C (221-230 °F)
Flash Point (°C):	14 °C (57.2 °F)	No data available	No data available
Ignition Temperature (°C):	363 °C (685 °F)	No data available	No data available
Density:	0.79 g/cm ³	No data available	No data available

Section X – Stability and Reactivity

Property	EDTA	Triton X-100	Ethanol
Chemical stability:	Stable under recommended storage conditions		
Conditions to avoid:	No data available	No data available	Heat, flames, sparks, extreme temperatures, direct sunlight
Materials to avoid:	Strong oxidizing agents	Strong oxidizing agents, strong acids, strong bases	Oxidizing agents, alkali metals, ammonia, peroxides
Hazardous decomposition products:	Carbon oxides, nitrogen oxides	Carbon oxides	Carbon oxides

Property	Ethanol	DTNB	SSA
Chemical stability:	Stable under recommended storage conditions		
Conditions to avoid:	Heat, flames, sparks, extreme temperatures, direct sunlight	No data available	No data available
Materials to avoid:	Oxidizing agents, alkali metals, ammonia, peroxides	Strong oxidizing agents, strong bases	Strong oxidizing agents, strong bases
Hazardous decomposition products:	Carbon oxides	Carbon oxides, nitrogen oxides, sulfur oxides	Carbon oxides, sulfur oxides

Section XI – Toxicological Information

Ethanol:

Acute toxicity: LD50 Oral – rat – 7,060 mg/kg→ Remarks: Lungs, thorax, or respiration : other changes

LC50 Inhalation – rat – 10 h – 20000 ppm

Skin corrosion/irritation: Skin – rabbit – irritating to skin – 24 h

Serious eye damage/eye irritation: Eyes – rabbit – mild eye irritation – 24 h (Draize test)

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity: Carcinogenicity – mouse – oral→ Tumorigenic: equivocal tumorigenic agent by RTECS criteria. Liver: tumors. Blood: Lymphomas including Hodgkin's disease.

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: Reproductive toxicity – human – female – oral→ Effects on newborn: apgar score (human only), other neonatal measures or effects, and drug dependence.

Teratogenicity: no data available

Specific target organ toxicity – single exposure (GHS): Inhalation – may cause respiratory irritation.

Specific target organ toxicity – repeated exposure (GHS): no data available

Aspiration hazard: no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure: Exposure may cause central nervous system depression, narcosis, and/or damage to the heart. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional information: RTECS: KQ6300000

DTNB:

Acute toxicity: LD50 Intraperitoneal – mouse – 2,080 mg/kg

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity – single exposure (GHS): no data available

Specific target organ toxicity – repeated exposure (GHS): no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional information: RTECS: DG9650000

SSA:

Acute toxicity: no data available

Skin corrosion/irritation: no data available

Serious eye damage/eye irritation: no data available

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: no data available

Carcinogenicity:

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

ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

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

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity: no data available

Teratogenicity: no data available

Specific target organ toxicity – single exposure (GHS): Inhalation – may cause respiratory irritation.

Specific target organ toxicity – repeated exposure (GHS): no data available

Aspiration hazard: no data available

Potential Health Effects

Inhalation: May be harmful if inhaled. Causes respiratory tract irritation.

Skin: May be harmful if absorbed through skin. Causes skin irritation.

Eyes: Causes eye irritation.

Ingestion: May be harmful if swallowed.

Signs and Symptoms of Exposure: To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Additional information: RTECS: not available

Section XII – Ecological Information

Persistence and degradability: no data available

Toxicity: Do not empty into drains. Do not flush into surface water or sanitary sewer system.

Bioaccumulative potential: no data available

Mobility in soil: no data available

PBT and vPvB assessment: PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects: no data available

Section XIII – Disposal Information

Product: Observe all federal, state, and local environmental regulations.

Contaminated packaging: Dispose of as unused product.

Section XIV – Transport Information

Ethanol:

DOT (US): UN-number: 1170, Class: 3, Packing group: II; Proper shipping name: Ethanol; Marine pollutant: No; Poison inhalation hazard: No

IMDG: UN-number: 1170, Class: 3, Packing group: II; EMS-No: F-E, S-D; Proper shipping name: ETHANOL; Marine pollutant: No

IATA: UN-number: 1170, Class: 3, Packing group: II; Proper shipping name: Ethanol

DTNB:

DOT (US): Not dangerous goods.

IMDG: Not dangerous goods.

IATA: Not dangerous goods.

SSA:

DOT: UN-No UN3265 Hazard Class 8 Packing Group II; Proper Shipping Name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.; Packing Group II

IMDG:

DOT: UN-No UN3265 Hazard Class 8 Packing Group II; Proper Shipping Name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.; Packing Group II

IATA:

DOT: UN-No UN3265 Hazard Class 8 Packing Group II; Proper Shipping Name CORROSIVE LIQUID, ACIDIC, ORGANIC, N.O.S.; Packing Group II

Section XV – Regulatory Information

OSHA Hazards: DTNB, & SSA: Irritant

Ethanol: Highly flammable liquid, Target organ effect, Irritant, Carcinogen

SARA 302 Components: SARA 302: No chemical in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components: The following components are subject to reporting levels established by SARA Title II, Section 313:

Ethanol CAS-No. 67-56-1; Revision Date: 2007-07-01

SARA 311/312 Hazards: DTNB, & SSA: Acute Health Hazard

Ethanol: Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components: Ethanol CAS-No. 64-17-5, Revision Date: 2007-03-01

Pennsylvania Right To Know Components: Ethanol CAS-No. 64-17-5, Revision Date: 2007-03-01

DTNB CAS-No. 69-78-3

Sulfosalicylic Acid (SSA) CAS-No. 5965-83-3

New Jersey Right To Know Components: Ethanol CAS-No. 64-17-5, Revision Date: 2007-03-01

DTNB CAS-No. 69-78-3

Sulfosalicylic Acid (SSA) CAS-No. 5965-83-3

California Prop. 65 Components: This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

EU Regulations:

Component	Risk Phrases	Safety Phrases
Ethanol	R11, R20/21/22	S16, S36/37/39, S45

DTNB	R36/37/38	S22, S24/25, S36/37/39, S45
SSA	R36/37/38	S26, S36/37/39, S49

Section XVI - Disclaimer

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. PromoCell shall not be held liable for any damage resulting from handling or from contact with the above product.

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