

MATERIAL SAFETY DATA SHEET

SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

Product name:	Caspase 4Activity Assay Kit(Colorimetric Method)
Catalog Number:	E-CK-A384
Application:	For research use only

SECTION 2 HAZARDS IDENTIFICATION

2.1 HAZARD STATEMENT

Classification according to GHS

2.1.1 DTT

H302: Harmful if swallowed.

H315: Causes skin irritation.

H319: Causes serious eye irritation

H335: May cause respiratory irritation.

2.1.2 p-nitroaniline

H301 + H311 + H331: Toxic if swallowed, if contact with skin or if inhaled.

H373: May cause damage to organs (Liver, Heart) through prolonged or repeated exposure if swallowed.

H412: Harmful to aquatic life with long lasting effects

2.2.1 DTT

P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

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/ eye protection/ face protection.

P301 + P312: IF SWALLOWED: Call a POISON CENTER or doctor/ physician if you feel unwell.

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.

P312: Call a POISON CENTER or doctor/ physician if you feel unwell.

P321: Specific treatment (see supplemental first aid instructions on this label).

P330: Rinse mouth.

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

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

P362: Take off contaminated clothing and wash before reuse.

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

P405: Store locked up.

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

2.2.2 p-nitroaniline

P260: Do not breathe dust/fume/gas/mist/vapours/spray.

P261: Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.

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.

P273: Avoid release to the environment.

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

P311: Call a POISON CENTER or doctor/physician.

P314: Get medical advice/attention if you feel unwell.

P330: Rinse mouth.

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

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

P405: Store locked up.

P403 + P233: Store in a well-ventilated place. Keep container tightly closed.

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

P302 + P352 + P312: IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or doctor/ physician if you feel unwell.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Items	Physical form	Hazardous Ingredient	Concentration	CAS No.
Reagent 1	Odorless and colorless, liquid	DTT	1%	3483-12-3
Reagent 2	Odorless and colorless, liquid	DTT	2%	3483-12-3
Reagent 3	Odorless and colorless, liquid	No hazards	-	-
Reagent 4	Odorless and yellow color, liquid	p-nitroaniline	2%	100-01-6

SECTION 4 FIRST-AID MEASURES

Classification according to GHS

4.1 General advice

Consult a physician. Show this safety data sheet to the doctor in attendance.

4.2 If inhaled

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

4.3 In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

4.4 In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

4.5 If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

SECTION 5 FIRE FIGHTING MEASURES

5.1 Suitable extinguishing media

Suitable: Water spray, alcohol-resistant foam, dry chemical, carbon dioxide or appropriate foam.

For small fires, use media such as "alcohol" foam, dry chemical or carbon dioxide.

For large fires, apply water from as far as possible. Use large quantities of water applied as a mist or spray. Solid streams of water may be ineffective. Cool affected containers with flooding quantities of water.

5.2 Special precautions for fire-fighters

Protective Equipment: Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

5.3 Special hazards arising from the substance or mixture

Carbon oxides, Nitrogen oxides (NOx), Sulphur oxides, Hydrogen chloride gas.

SECTION 6 ACCIDENTAL RELEASE MEASURES

6.1 Person-related safety precautions

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

6.2 Measures for environmental protection

Prevent further leakage or spillage if safe to do so. Do not let enter drains. Discharge into the environment must be avoided.

6.3 Measures for containment and cleaning

Contain spillage, and then collect with non-combustible absorbent material (eg. sand, diatomaceous earth, vermiculite). Place in a container for disposal according to local regulations. Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal. Sweep up and shovel. 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 (see section 13). Keep in suitable, closed containers for disposal.

SECTION 7 HANDLING AND STORAGE

7.1 Handling

Wear appropriate protective clothing and safety gloves.

Avoid inhalation.

Avoid contact with eyes, skin and clothing.

Mechanical exhaust required.

Keep away from ignition sources, heat and flame.

No smoking at working site.

Incompatibilities: Strong oxidizing agents, Strong acids. Handling and unloading should be light, to prevent packaging broken, damp and cause losses.

Working place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

7.2 Storage

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

Keep away from heat, sparks and flame.

Keep away from sources of ignition.

Incompatible: Strong oxidizing agents, Strong acids.

Storage place should be equipped with appropriate varieties and quantities of fire fighting equipment and leakage emergency treatment equipment.

SECTION 8 EXPOSURE CONTROL/PPE

8.1 Engineering Controls

Mechanical exhaust required. Safety shower and eye bath.

8.2 Personal Protective Equipment

Respiratory: Government approved respirator if needed.

Eye/face: Chemical safety goggles if needed.

Clothing: Wear appropriate protective clothing.

Hand/skin: Protective 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.

Body protection: Wear suitable protective clothing according to the concentration and amount of the substance at the workplace.

8.3 Other Protect

No smoking, drinking and eating at working site. Wash thoroughly after handling.

SECTION 9 PHYSICAL/CHEMICAL PROPERTIES

9.1 DTT

a) Appearance: White powder

b) Odor: Unpleasant

- c) Odor Threshold: No data available
- d) pH: 4.0 – 6 at 15.4 g/l at 25°C
- e) Melting point/freezing point: Melting point/range: 42°C - 43°C
- f) Initial boiling point and boiling range: 125 - 130°C
- g) Flash point: 113°C – closed cup
- h) Evaporation rate: No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: No data available
- l) Vapor density: No data available
- m) Relative density: No data available
- n) Water solubility: 15.4 g/l at 20°C
- o) Partition coefficient: n-octanol/water: No data available
- p) Autoignition temperature: No data available
- q) Decomposition temperature: No data available
- r) Viscosity: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

9.2 p-nitroaniline

- a) Appearance: No data available
- b) Odor: No data available
- c) Odor Threshold: No data available
- d) pH: No data available
- e) Melting point/freezing point: 146°C
- f) Initial boiling point and boiling range: 329°C
- g) Flash point: 213°C
- h) Evaporation rate: No data available
- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: No data available
- l) Vapor density: No data available
- m) Relative density: No data available
- n) Water solubility: No data available
- o) Partition coefficient: n-octanol/water: No data available
- p) Autoignition temperature: No data available
- q) Decomposition temperature: No data available
- r) Viscosity: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available.

SECTION 10 STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heat, flames and sparks

10.5 Incompatible materials

Strong oxidizing agent, Light sensitive, Alcohols, Organic materials, Heavy metals, Powdered metals, Strong reducing agents, Amines, Mercaptans.

10.6 Hazardous decomposition products

Other decomposition products: No data available

Hazardous decomposition products formed under fire conditions: Carbon oxides, Nitrogen oxides (NO_x), Sulphur oxides, Hydrogen chloride gas.

SECTION 11 TOXICOLOGICAL INFORMATION

11.1 DTT

Acute toxicity

LD50 Oral - Rat - 400 mg/kg

Inhalation: no data available

Dermal: no data available

Skin corrosion/irritation

The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling.

Serious eye damage/eye irritation

The preceding data, or interpretation of data, was determined using Quantitative Structure Activity Relationship (QSAR) modeling.

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

Specific target organ toxicity - single exposure

Inhalation – May cause respiratory irritation.

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: EK1610000

Nausea, Headache, Vomiting, Central nervous system depression, To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Liver – Irregularities – Based on Human Evidence

Liver – Irregularities – Based on Human Evidence

11.2 p-nitroaniline

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.

Reproductive toxicity

No data available

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Long - term or repeated exposure may damage organs.

Aspiration hazard

No data available.

SECTION 12 ECOLOGICAL INFORMATION

12.1 DTT

Toxicity

Toxicity to fish: No data available

Toxicity to daphnia and other aquatic invertebrates: LC50 – Daphnia magna (Water flea) - 27 mg/l - 48 h

Toxicity to algae: No data available

Toxicity to bacteria: No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

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

Other adverse effects

No data available

12.2 p-nitroaniline

Toxicity

No data available.

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

No data available

Other adverse effects

No data available

SECTION 13 DISPOSAL CONSIDERATION

13.1 Disposal methods

Dispose of waste in accordance to applicable national, regional, or local regulations. Burn in a chemical incinerator equipped with an afterburner and scrubber b highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

13.2 Contaminated packaging

Dispose in the same manner as unused product.

SECTION 14 TRANSPORT INFORMATION

RID/ADR: Non-Hazardous for Transport: This substance is considered to be non-hazardous for transport.

IATA: Non-Hazardous for Air Transport.

IMO: Non-Hazardous for Sea Transport.

SECTION 15 REGULATORY INFORMATION

This material safety data sheet complies with the requirements of Regulation (EC) No. 1272/2008 and its amendments.

SECTION 16 OTHER INFORMATION

IMPORTANT! Read the safety data sheets before the use and disposal of this product. Insure that this information is understood by the operators exposed to this product. Use this product for the intended purpose as indicated in the instruction manual.

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as guide. We make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from this use. Users should make their own investigation to determine the suitability of the information for their particular purposes. In no way shall we be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising from using the above information.