Safety Data Sheet

SECTION I: Product and company identification

1.1 Product identifiers

Product name: Complete Hydrolysis Reference (CHR), 100× Stock (Component of the MEDNA Trypsin Activity Assay Kit)
Kit: Trypsin Activity Assay Kit
Catalog number: M9100
Brand: MEDNA™
Form: Aqueous liquid

Synonyms:
CHR 100× Stock
Trypsin Complete Hydrolysis Reference
100% Hydrolysis Reference

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

Identified uses: Laboratory reagent; enzyme reference for determination of the complete-hydrolysis signal in a chromogenic trypsin activity assay; analytical research.

Uses advised against: For research use only. Not for human or veterinary diagnostic, therapeutic, clinical, food, or household use.

1.3 Details of the supplier of the safety data sheet

Company: MEDNA Scientific™
Address: 1551 Corporate Dr. Irving, TX 75038
Telephone: 469-496-8847
Email: support@mednabio.com

Emergency phone number: 469-496-8847

SECTION II: Hazards identification

2.1 Classification of the substance or mixture

GHS classification under OSHA Hazard Communication Standard (29 CFR 1910.1200):

- Not classified as hazardous.

2.2 GHS label elements

Pictogram: None required

Signal word: None required

Hazard statements: None required

Precautionary statements: None required. Observe good laboratory practice.

2.3 Hazards not otherwise classified

This product contains trypsin, a proteolytic enzyme. Concentrated trypsin is classified as a respiratory sensitizer (Category 1, H334). The trypsin concentration in this product is below the 0.1% concentration threshold for classification of a solid/liquid mixture as a respiratory sensitizer.

Persons previously sensitized to proteolytic enzymes may react to low airborne concentrations.

Avoid generating enzyme-containing mist or aerosols.

SECTION III: Composition/information on ingredients

3.1 Hazardous component

No component is present at or above its OSHA HCS classification threshold. The following ingredient is listed because proteolytic enzymes may present a health risk to sensitized individuals below the classification threshold.

Component	Identifier	Weight-%	Classification
Trypsin	CAS 9002-07-7	< 0.1*	Not classified at the concentration present**

**The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with 29 CFR 1910.1200(i).*

***Pure trypsin is classified as Resp. Sens. 1; H334.*

3.2 Other ingredients

Aqueous buffer solution.

Other ingredients are not classified as hazardous under the OSHA Hazard Communication Standard and are not listed.

SECTION IV: First aid measures

4.1 Description of first-aid measures

General advice

Provide this Safety Data Sheet to medical personnel when appropriate.

If inhaled

Move the exposed individual to fresh air.

If coughing, wheezing, shortness of breath, or other respiratory symptoms occur, seek medical attention.

Persons previously sensitized to proteolytic enzymes may react to low airborne concentrations.

In case of skin contact

Remove contaminated clothing.

Wash affected skin thoroughly with soap and water.

Seek medical attention if irritation develops or persists.

In case of eye contact

Immediately rinse with plenty of water for several minutes.

Remove contact lenses if present and easy to do.

Continue rinsing.

Seek medical attention if irritation persists.

If swallowed

Rinse mouth with water.

Do not induce vomiting unless directed by medical personnel.

Seek medical attention if symptoms develop.

4.2 Most important symptoms and effects, both acute and delayed

Not expected to present a significant hazard under normal laboratory use.

In persons previously sensitized to proteolytic enzymes, aerosol exposure may cause:

- Coughing
- Wheezing
- Shortness of breath
- Asthma-like symptoms

Direct contact may cause mild eye or skin irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Respiratory or asthma-like symptoms should receive prompt medical evaluation.

SECTION V: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing media appropriate for the surrounding fire:

- Water spray
- Foam
- Carbon dioxide
- Dry chemical powder

Unsuitable extinguishing media

No specific restrictions known.

5.2 Special hazards arising from the substance or mixture

The product is an aqueous solution and is not expected to present a significant fire hazard under normal laboratory conditions.

Thermal decomposition of dried residues may produce:

- Carbon oxides
- Nitrogen oxides
- Sulfur-containing decomposition products

5.3 Advice for firefighters

Wear self-contained breathing apparatus and appropriate protective clothing when required by fire conditions.

SECTION VI: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid inhalation of mist or aerosol.

Avoid contact with skin and eyes.

Wear appropriate personal protective equipment.

See Section 8 for personal protective equipment.

6.2 Environmental precautions

Avoid unnecessary release into drains or the environment.

6.3 Methods and materials for containment and cleaning up

Absorb spilled material with an appropriate inert absorbent.

Avoid splashing or aerosol generation.

Collect into an appropriate waste container.

Clean the affected surface thoroughly.

6.4 Reference to other sections

For disposal information, see Section 13.

SECTION VII: Handling and storage

7.1 Precautions for safe handling

Avoid inhalation of enzyme-containing mist or aerosols.

Avoid contact with eyes and skin.

Avoid vigorous mixing or spraying that may generate aerosols.

Keep containers closed when not in use.

Wash hands thoroughly after handling.

Do not eat, drink, or smoke in laboratory work areas.

7.2 Conditions for safe storage, including any incompatibilities

Product storage

Store tightly closed at -20°C.

Handling after thawing

Aliquot the diluted 1× reference into single-use volumes and store at -20°C.

Avoid repeated freeze-thaw cycles.

7.3 Specific end uses

Laboratory research applications as described in Section 1.2.

SECTION VIII: Exposure controls/personal protection

8.1 Control parameters

No OSHA permissible exposure limit or ACGIH threshold limit value has been established for any component of this product.

Because proteolytic enzymes can cause respiratory sensitization, airborne exposure should be minimized.

8.2 Exposure controls

Appropriate engineering controls

Use adequate laboratory ventilation.

Avoid procedures that generate enzyme-containing aerosols.

Eye/face protection

Wear safety glasses with side shields appropriate for laboratory work.

Skin protection

Wear laboratory gloves. Nitrile gloves are suitable for routine laboratory handling.

Body protection

Wear a laboratory coat.

Respiratory protection

Not required under normal conditions of use.

Environmental exposure controls

Avoid unnecessary release into drains.

SECTION IX: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property	Value
Appearance	Clear aqueous solution
Color	Colorless
Odor	No data available
Odor threshold	No data available
pH	Approximately 7 – 9
Melting/freezing point	Approximately that of an aqueous solution
Initial boiling point	Approximately that of an aqueous solution
Flash point	Not applicable
Evaporation rate	No data available
Flammability	Not expected to be flammable
Upper/lower explosive limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Density	No data available
Water solubility	Miscible with water
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	Not classified as explosive
Oxidizing properties	None expected

9.2 Other safety information

No additional data available.

SECTION X: Stability and reactivity

10.1 Reactivity

No hazardous reactivity is expected for the aqueous formulation under normal laboratory conditions.

10.2 Chemical stability

The product is expected to remain stable when stored under recommended frozen conditions.

Trypsin may undergo autolysis and loss of enzymatic activity when maintained for extended periods under conditions favorable for proteolysis.

10.3 Possibility of hazardous reactions

No hazardous reactions are known under normal use conditions.

10.4 Conditions to avoid

Avoid:

- Excessive heat
- Repeated freeze-thaw cycles

10.5 Incompatible materials

Strong oxidizing agents.

Materials or reagents that cause protein denaturation or degradation may affect product activity.

10.6 Hazardous decomposition products

In the event of fire, see Section 5.

SECTION XI: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified. Trypsin: oral LD50 > 5 g/kg (rat). Product-specific data are not available.

Skin corrosion/irritation

Not classified. Direct contact may cause mild irritation.

Serious eye damage/eye irritation

Not classified. Direct contact may cause mild irritation.

Respiratory or skin sensitization

Not classified. The trypsin concentration in this product is below the 0.1% classification threshold for a respiratory sensitizer.

Exposure to enzyme-containing mist or aerosol may cause allergic respiratory symptoms in previously sensitized individuals.

Germ cell mutagenicity

No product-specific data available.

Carcinogenicity

No component is listed as a carcinogen by IARC, NTP, or OSHA.

Reproductive toxicity

No product-specific data available.

Specific target organ toxicity – single exposure

Not classified.

Specific target organ toxicity – repeated exposure

No product-specific data available.

Aspiration hazard

Not applicable.

11.2 Additional information

The finished mixture has not been tested as a whole. Classification is based on available ingredient information and applicable OSHA HCS mixture criteria.

SECTION XII: Ecological information

12.1 Toxicity

No product-specific ecological toxicity data available.

12.2 Persistence and degradability

As a protein, trypsin is expected to undergo biological degradation under suitable environmental conditions.

12.3 Bioaccumulative potential

Significant bioaccumulation is not expected.

12.4 Mobility in soil

No data available.

12.5 PBT and vPvB assessment

No assessment available.

12.6 Other adverse effects

No data available. Avoid unnecessary environmental release.

SECTION XIII: Disposal considerations

13.1 Waste treatment methods

Dispose of waste material in accordance with applicable federal, state, local, and institutional regulations.

This product is not expected to be a hazardous waste as supplied.

Avoid disposal methods that generate enzyme-containing mist or aerosols.

SECTION XIV: Transport information

DOT (US)

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

Frozen shipments using dry ice

If used for shipment, dry ice is regulated separately as UN1845, Carbon dioxide, solid.

SECTION XV: Regulatory information

This product is intended for research use only. This Safety Data Sheet is prepared in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

The formulation is not classified as hazardous because its trypsin concentration is below the generic 0.1% concentration threshold for a respiratory sensitizer in a solid/liquid mixture.

TSCA: All components of this product are listed on the TSCA Inventory.

SARA 302/313: This product contains no chemicals subject to SARA Title III Section 302 or 313 reporting.

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

SECTION XVI: Other information

This Safety Data Sheet is based on currently available information and describes the product for health, safety, and environmental purposes; it is not a warranty of product properties. Users must determine suitability and comply with applicable requirements.

For Research Use Only

Version: 1.0 Effective Date: 10/29/2026

Safety Data Sheet

Reaction Buffer

SECTION I: Product and company information

1.1 Product identifiers

Product name: Reaction Buffer (Component of the MEDNA Trypsin Activity Assay Kit)
Kit: Trypsin Activity Assay Kit
Catalog number: M9100
Brand: MEDNA™
Form: Aqueous liquid

Synonyms:
Assay Buffer
Trypsin Activity Assay Reaction Buffer

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

Identified uses: Laboratory reagent; buffer for preparation of the reference, substrate working solution, and sample dilutions in a trypsin activity assay; analytical research.

Uses advised against: For research use only. Not for human or veterinary diagnostic, therapeutic, clinical, food, or household use.

1.3 Details of the supplier of the safety data sheet

Company: MEDNA Scientific™
Address: 1551 Corporate Dr. Irving, TX 75038
Telephone: 469-496-8847
Email: support@mednabio.com

Emergency phone number: 469-496-8847

SECTION II: Hazards identification

2.1 Classification of the substance or mixture

GHS classification under OSHA Hazard Communication Standard (29 CFR 1910.1200):

- Not classified as hazardous.

2.2 GHS label elements

Pictogram: None required

Signal word: None required

Hazard statements: None required

Precautionary statements: None required. Observe good laboratory practice.

2.3 Hazards not otherwise classified

None identified.

SECTION III: Composition/information on ingredients

3.1 Hazardous component

This product contains no hazardous ingredients as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

3.2 Other ingredients

Aqueous buffer solution.

Other ingredients are not classified as hazardous under the OSHA Hazard Communication Standard and are not listed.

SECTION IV: First aid measures

4.1 Description of first-aid measures

General advice

Provide this Safety Data Sheet to medical personnel when appropriate.

If inhaled

Move the exposed individual to fresh air.

Seek medical attention if symptoms occur.

In case of skin contact

Wash affected skin with soap and water.

Seek medical attention if irritation develops.

In case of eye contact

Rinse with plenty of water for several minutes.

Remove contact lenses if present and easy to do.

Continue rinsing.

Seek medical attention if irritation persists.

If swallowed

Rinse mouth with water.

Seek medical attention if symptoms develop.

4.2 Most important symptoms and effects, both acute and delayed

Not expected to present a significant hazard under normal laboratory use.

May cause slight, transient eye irritation.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

SECTION V: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing media appropriate for the surrounding fire:

- Water spray
- Foam
- Carbon dioxide
- Dry chemical powder

Unsuitable extinguishing media

No specific restrictions known.

5.2 Special hazards arising from the substance or mixture

The product is an aqueous solution and is not expected to present a fire hazard.

Thermal decomposition of dried residues may produce:

- Carbon oxides
- Nitrogen oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus and appropriate protective clothing when required by fire conditions.

SECTION VI: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid contact with eyes.

Wear appropriate personal protective equipment.

Spilled solution may make surfaces slippery.

See Section 8 for personal protective equipment.

6.2 Environmental precautions

Avoid unnecessary release into drains or the environment.

6.3 Methods and materials for containment and cleaning up

Absorb spilled material with an appropriate inert absorbent.

Collect into an appropriate waste container.

Rinse the affected surface with water.

6.4 Reference to other sections

For disposal information, see Section 13.

SECTION VII: Handling and storage

7.1 Precautions for safe handling

Handle in accordance with good laboratory hygiene and safety practice.

Avoid contact with eyes.

Keep containers closed when not in use.

Wash hands thoroughly after handling.

Do not eat, drink, or smoke in laboratory work areas.

7.2 Conditions for safe storage, including any incompatibilities

Product storage

Store tightly closed at -20°C.

Handling after thawing

Thaw completely and mix before use.

Avoid microbial contamination of opened bottles.

7.3 Specific end uses

Laboratory research applications as described in Section 1.2.

SECTION VIII: Exposure controls/personal protection

8.1 Control parameters

No OSHA permissible exposure limit or ACGIH threshold limit value has been established for any component of this product.

8.2 Exposure controls

Appropriate engineering controls

Use adequate general laboratory ventilation.

Eye/face protection

Wear safety glasses with side shields appropriate for laboratory work.

Skin protection

Wear laboratory gloves. Nitrile gloves are suitable for routine laboratory handling.

Body protection

Wear a laboratory coat.

Respiratory protection

Not required under normal conditions of use.

Environmental exposure controls

Avoid unnecessary release into drains.

SECTION IX: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property	Value
Appearance	Clear aqueous solution
Color	Colorless
Odor	No data available
Odor threshold	No data available
pH	Approximately 7 - 9
Melting/freezing point	Approximately that of an aqueous solution
Initial boiling point	Approximately that of an aqueous solution
Flash point	Not applicable
Evaporation rate	No data available
Flammability	Not expected to be flammable
Upper/lower explosive limits	No data available
Vapor pressure	No data available
Vapor density	No data available
Density	No data available
Water solubility	Miscible with water
Partition coefficient	No data available
Autoignition temperature	No data available
Decomposition temperature	No data available
Viscosity	No data available
Explosive properties	Not classified as explosive
Oxidizing properties	None expected

9.2 Other safety information

No additional data available.

SECTION X: Stability and reactivity

10.1 Reactivity

No hazardous reactivity is expected under normal laboratory conditions.

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

No hazardous reactions are known under normal use conditions.

10.4 Conditions to avoid

Avoid excessive heat and microbial contamination.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

In the event of fire, see Section 5.

SECTION XI: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified. Product-specific data are not available.

Skin corrosion/irritation

Not classified.

Serious eye damage/eye irritation

Not classified. May cause slight, transient irritation.

Respiratory or skin sensitization

Not classified.

Germ cell mutagenicity

Not classified.

Carcinogenicity

No component is listed as a carcinogen by IARC, NTP, or OSHA.

Reproductive toxicity

Not classified.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

Not classified.

Aspiration hazard

Not applicable.

11.2 Additional information

Classification is based on available ingredient information and applicable OSHA HCS mixture criteria.

SECTION XII: Ecological information

12.1 Toxicity

No product-specific ecological toxicity data available. Not expected to be hazardous to the aquatic environment.

12.2 Persistence and degradability

No data available.

12.3 Bioaccumulative potential

Significant bioaccumulation is not expected.

12.4 Mobility in soil

Miscible with water.

12.5 PBT and vPvB assessment

No assessment available.

12.6 Other adverse effects

No data available.

SECTION XIII: Disposal considerations

13.1 Waste treatment methods

Dispose of waste material in accordance with applicable federal, state, local, and institutional regulations.

This product is not expected to be a hazardous waste as supplied.

SECTION XIV: Transport information

DOT (US)

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

Frozen shipments using dry ice

If used for shipment, dry ice is regulated separately as UN1845, Carbon dioxide, solid.

SECTION XV: Regulatory information

This product is intended for research use only. This Safety Data Sheet is prepared in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

The formulation is not classified as hazardous.

TSCA: All components of this product are listed on the TSCA Inventory.

SARA 302/313: This product contains no chemicals subject to SARA Title III Section 302 or 313 reporting.

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

SECTION XVI: Other information

This Safety Data Sheet is based on currently available information and describes the product for health, safety, and environmental purposes; it is not a warranty of product properties. Users must determine suitability and comply with applicable requirements.

For Research Use Only

Version: 1.0 Effective Date: 10/28/2026

Safety Data Sheet

SECTION I: Product and company information

1.1 Product identifiers

Product name: Chromogenic Substrate Stock, 100 mM (Component of the MEDNA Trypsin Activity Assay Kit)
Kit: Trypsin Activity Assay Kit
Catalog number: M9100
Brand: MEDNA™
Form: Liquid; 100 mM substrate in dimethyl sulfoxide (DMSO)

Synonyms:
Boc-Gln-Ala-Arg-pNA Substrate Stock
Boc-Gln-Ala-Arg-p-nitroanilide hydrochloride, 100 mM in DMSO
Boc-QAR-pNA

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

Identified uses: Laboratory reagent; chromogenic substrate for measurement of trypsin activity by p-nitroaniline release (A405); analytical research.

Uses advised against: For research use only. Not for human or veterinary diagnostic, therapeutic, clinical, food, or household use.

1.3 Details of the supplier of the safety data sheet

Company: MEDNA Scientific™
Address: 1551 Corporate Dr. Irving, TX 75038
Telephone: 469-496-8847
Email: support@mednabio.com

Emergency telephone: 469-496-8847

SECTION II: Hazards identification

2.1 Classification of the substance or mixture

GHS classification under OSHA Hazard Communication Standard (29 CFR 1910.1200):

- Flammable liquids, Category 4 - **H227**

2.2 GHS label elements

Pictogram: None required

Signal word: Warning

Hazard statements

H227: Combustible liquid.

Precautionary statements

P210: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P280: Wear protective gloves, protective clothing, and eye protection.

P370 + P378: In case of fire: Use dry chemical, carbon dioxide, or alcohol-resistant foam to extinguish.

P403: Store in a well-ventilated place.

P501: Dispose of contents/container in accordance with applicable regulations.

2.3 Hazards not otherwise classified

None identified.

2.4 Other hazards

This product contains DMSO. DMSO is readily absorbed through the skin and may carry dissolved substances into the body.

Exposure may aggravate pre-existing eye, skin, or respiratory conditions.

Hydrolysis of the substrate releases p-nitroaniline (4-nitroaniline, CAS 100-01-6), which is toxic. Complete hydrolysis of one vial (50 µL, 5 µmol substrate) releases at most approximately 0.7 mg of p-nitroaniline.

SECTION III: Composition/information on ingredients

3.1 Hazardous component

Component	Identifier	Classification	Concentration
Dimethyl sulfoxide (DMSO)	CAS 67-68-5	Flam. Liq. 4; H227	Approx. 94% (w/w)

Hazard statement: H227

3.2 Complete formulation

Solution in dimethyl sulfoxide

Component	Concentration
Boc-Gln-Ala-Arg-p-nitroanilide hydrochloride (C25H39N9O8·HCl; MW 630.10; CAS 1926163-47-4 (net))	100 mM (approx. 63 mg/mL; approx. 6% w/w)
Dimethyl sulfoxide (DMSO)	Balance

No preservative is included.

SECTION IV: First aid measures

4.1 Description of first-aid measures

General advice

Never give anything by mouth to an unconscious person.

Provide this Safety Data Sheet to medical personnel when appropriate.

If inhaled

Move the exposed individual to fresh air.

Seek medical attention if breathing difficulty or irritation persists.

In case of skin contact

Immediately remove contaminated clothing.

Wash affected skin with soap and plenty of water for at least 15 minutes.

Seek medical attention if irritation develops or persists.

In case of eye contact

Immediately rinse with plenty of water for at least 15 minutes.

Remove contact lenses if present and easy to do.

Continue rinsing.

Seek medical attention if irritation persists.

If swallowed

Rinse mouth with water.

Do not induce vomiting.

Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Potential symptoms include:

- Mild eye irritation
- Skin redness, itching, or burning sensation after prolonged contact
- Garlic-like taste or breath odor following DMSO absorption
- Gastrointestinal upset if swallowed

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

Note to physician: DMSO enhances skin penetration of dissolved substances. The hydrolysis product p-nitroaniline can cause methemoglobinemia; the quantity present in this product is small.

SECTION V: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media

- Dry chemical powder
- Carbon dioxide
- Alcohol-resistant foam

Water spray may be used to cool fire-exposed containers.

Unsuitable extinguishing media

Do not use a heavy water stream; it may spread burning liquid.

5.2 Special hazards arising from the substance or mixture

Combustible liquid. Vapors may form flammable mixtures with air when heated above the flash point.

DMSO may decompose at temperatures near its boiling point (approximately 189°C); this decomposition may be violent.

Reacts violently with strong oxidizing agents.

Thermal decomposition may produce:

- Carbon oxides
- Sulfur oxides
- Nitrogen oxides
- Hydrogen chloride

5.3 Advice for firefighters

Wear self-contained breathing apparatus and appropriate protective clothing when required by fire conditions.

Use water spray or fog to cool exposed containers.

SECTION VI: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Remove all sources of ignition.

Ensure adequate ventilation.

Avoid contact with skin, eyes, and clothing.

Avoid breathing vapors.

See Section 8 for personal protective equipment.

6.2 Environmental precautions

Prevent entry into drains, sewers, and waterways.

6.3 Methods and materials for containment and cleaning up

Absorb spilled material with an inert, non-combustible absorbent (e.g., sand, vermiculite, or a chemical spill pad).

Collect into a suitable closed container for disposal as chemical waste.

Wash the affected surface with water and detergent.

6.4 Reference to other sections

For disposal information, see Section 13.

SECTION VII: Handling and storage

7.1 Precautions for safe handling

Avoid contact with skin, eyes, and clothing; DMSO readily penetrates skin.

Avoid breathing vapors.

Keep away from heat, sparks, and open flames.

Keep containers closed when not in use.

Wash hands thoroughly after handling.

Do not eat, drink, or smoke in laboratory work areas.

7.2 Conditions for safe storage, including any incompatibilities

Product storage

Store tightly closed at -20°C, protected from light and moisture.

Handling after thawing

DMSO solutions solidify below approximately 18°C. Allow the vial to thaw completely at room temperature and mix before opening.

Prepare the 1 mM substrate working solution immediately before use.

Incompatible materials

Strong oxidizing agents, strong acids, strong bases, acid halides.

7.3 Specific end uses

Laboratory research applications as described in Section 1.2.

SECTION VIII: Exposure controls/personal protection

8.1 Control parameters

Component	Exposure limit
Dimethyl sulfoxide (CAS 67-68-5)	WEEL (OARS/AIHA): 250 ppm TWA

No OSHA permissible exposure limit or ACGIH threshold limit value has been established for any component.

8.2 Exposure controls

Appropriate engineering controls

Use adequate laboratory ventilation.

An eyewash station should be available in the work area.

Eye/face protection

Wear safety glasses with side shields or tightly fitting safety goggles.

Skin protection

Wear chemical-resistant laboratory gloves. Nitrile gloves are suitable for incidental splash contact only, because DMSO permeates nitrile; change gloves immediately after contamination.

For prolonged contact, use butyl rubber gloves.

Body protection

Wear a laboratory coat.

Respiratory protection

Not required under normal conditions of use with adequate ventilation. If irritation is experienced, use appropriately selected NIOSH-approved respiratory protection.

Environmental exposure controls

Avoid release into drains.

SECTION IX: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Property	Value
Appearance	Clear liquid (solid when frozen)
Color	Colorless to pale yellow
Odor	Slight characteristic odor
Odor threshold	No data available
pH	Not applicable (non-aqueous solution)
Melting/freezing point	Approximately 18°C (DMSO)
Initial boiling point	Approximately 189°C (DMSO)
Flash point	Approximately 87-89°C, closed cup (DMSO)
Evaporation rate	No data available
Flammability	Combustible liquid
Upper/lower explosive limits	No data available
Vapor pressure	Approximately 0.6 hPa at 20°C (DMSO)
Vapor density	No data available
Density	Approximately 1.1 g/mL
Water solubility	Miscible with water
Partition coefficient	log Pow -1.35 (DMSO)
Autoignition temperature	No data available

Property	Value
Decomposition temperature	DMSO may decompose near its boiling point
Viscosity	Approximately 2 mPa·s at 20°C (DMSO)
Explosive properties	Not classified as explosive
Oxidizing properties	None expected

9.2 Other safety information

No additional data available.

SECTION X: Stability and reactivity

10.1 Reactivity

Reacts violently with strong oxidizing agents, with increased risk of fire or explosion.

10.2 Chemical stability

Stable under recommended storage conditions. Hygroscopic.

The substrate slowly hydrolyzes in the presence of moisture or proteases, releasing yellow p-nitroaniline.

10.3 Possibility of hazardous reactions

Violent reaction with strong oxidizers and acid halides.

10.4 Conditions to avoid

Avoid:

- Heat, sparks, open flames, and other ignition sources
- Direct sunlight
- Moisture

10.5 Incompatible materials

Strong oxidizing agents, strong acids, strong bases, acid halides.

10.6 Hazardous decomposition products

Thermal decomposition: carbon oxides, sulfur oxides, nitrogen oxides, hydrogen chloride. Hydrolysis: p-nitroaniline.

SECTION XI: Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Not classified.

Component	Oral LD50	Dermal LD50	Inhalation LC50
DMSO (67-68-5)	28,300 mg/kg (rat)	40,000 mg/kg (rat)	> 5.33 mg/L, 4 h (rat)
Boc-Gln-Ala-Arg-pNA·HCl	No data available	No data available	No data available

Skin corrosion/irritation

Not classified. Prolonged contact may cause mild irritation.

Serious eye damage/eye irritation

Not classified. May cause slight, transient eye irritation.

Respiratory or skin sensitization

Not classified.

Germ cell mutagenicity

No product-specific data available.

Carcinogenicity

No component present at or above 0.1% is listed as a carcinogen by IARC, NTP, or OSHA.

Reproductive toxicity

No product-specific data available.

Specific target organ toxicity - single exposure

Not classified.

Specific target organ toxicity - repeated exposure

No product-specific data available.

Aspiration hazard

Not classified.

11.2 Additional information

The toxicological properties of Boc-Gln-Ala-Arg-p-nitroanilide hydrochloride have not been thoroughly investigated.

Its hydrolysis product, p-nitroaniline (CAS 100-01-6), is classified as acutely toxic by oral, dermal, and inhalation routes and may cause damage to the blood (methemoglobinemia) through prolonged or repeated exposure.

The finished mixture has not been tested as a whole. Classification is based on available ingredient information and applicable OSHA HCS mixture criteria.

SECTION XII: Ecological information

12.1 Toxicity

DMSO: LC50 (Pimephales promelas, 96 h) 34,000 mg/L. Not classified as hazardous to the aquatic environment.

12.2 Persistence and degradability

No data available for the mixture.

12.3 Bioaccumulative potential

Low bioaccumulation potential (DMSO log Pow -1.35).

12.4 Mobility in soil

Miscible with water; expected to be mobile in soil.

12.5 PBT and vPvB assessment

No assessment available.

12.6 Other adverse effects

Avoid release to the environment.

SECTION XII: Disposal considerations

13.1 Waste treatment methods

Dispose of contents and container as chemical waste in accordance with applicable federal, state, local, and institutional regulations, using a licensed waste disposal service.

Do not pour down the drain.

Handle empty containers with care; residual vapors are combustible.

SECTION XIV: Transport information

DOT (US)

Bulk packaging: NA1993, Combustible liquid, n.o.s. (dimethyl sulfoxide), III.

Non-bulk packaging (as supplied in this kit): Not subject to the Hazardous Materials Regulations per 49 CFR 173.150(f)(2).

IMDG

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

Frozen shipments using dry ice

If used for shipment, dry ice is regulated separately as UN1845, Carbon dioxide, solid.

SECTION XV: Regulatory information

This product is intended for research use only. This Safety Data Sheet is prepared in accordance with the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

The formulation is classified as Flammable Liquid Category 4 (combustible liquid) because DMSO, the principal component, has a flash point between 60°C and 93°C.

TSCA: Dimethyl sulfoxide (67-68-5) is listed on the TSCA Inventory. Boc-Gln-Ala-Arg-p-nitroanilide hydrochloride is supplied under the TSCA Research and Development Exemption (40 CFR 720.36) and may not be used for any non-exempt commercial purpose.

SARA 302/313: This product contains no chemicals subject to SARA Title III Section 302 or 313 reporting.

SARA 311/312 hazard classes: Flammable (gases, aerosols, liquids, or solids).

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

State Right-to-Know: Boc-Gln-Ala-Arg-p-nitroanilide hydrochloride is identified by the raw-material supplier as a New Jersey and Pennsylvania Right-to-Know component.

SECTION XVI: Other information

Full text of H-statements: H227 - Combustible liquid.

This Safety Data Sheet is based on currently available information and describes the product for health, safety, and environmental purposes; it is not a warranty of product properties. Users must determine suitability and comply with applicable requirements.

For Research Use Only

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