RIPA Buffer (10X)

Store at –20°C

✓ 15 ml

**Description:** RIPA buffer is used to lyse cells and tissues.

1X RIPA Buffer:
- 20 mM Tris-HCl (pH 7.5)
- 150 mM NaCl, 1 mM Na₂EDTA
- 1 mM EGTA
- 1% NP-40
- 1% sodium deoxycholate
- 2.5 mM sodium pyrophosphate
- 1 mM β-glycerophosphate
- 1 mM Na₃VO₄
- 1 µg/ml leupeptin.

**Directions for Use**

1. If buffer will be continually used, it is recommended that the 10x buffer be kept at 4°C for 1-2 weeks. For longer periods of time, buffer should be stored at -20°C. Aliquotting of 10x buffer is recommended if many small experiments are to be performed.

2. Thaw 10x buffer at 24-30°C, mixing end-over-end.

3. Dilute 10X RIPA Buffer to a 1X solution using ddH₂O.

4. Chill 1x buffer on ice and add PMSF just prior to use.

**Note:** CST recommends adding 1 mM PMSF immediately before use.

**Lysis:**

For lysis of adherent cells, we recommend the following: (all reagents and lysates must be kept cold).

1. Treat cells as desired.
2. Wash plate with PBS to remove residual media.
3. Add 400 µl of 1X RIPA buffer/10 cm dish.
4. Incubate plate on ice for 5 minutes.
5. Scrape cells.
7. Centrifuge extract for 10 minutes at 14,000 x g in a cold microfuge.
8. Remove supernatant for use.

**Additional notes:**

1. For non-adherent cells, add 400 µl of buffer per 10⁷ cells once they have been washed in 1X PBS and pelleted.

2. 1X RIPA Buffer can be used for lysis of tissue samples, although a homogenization step is recommended after adding lysis buffer. Extract the tissue at a ratio of 100 mg of tissue to 1 ml of buffer. Sonication of the tissue lysate is also required.

3. Additional protease inhibitors can be added to the 1x lysis buffer without any difficulties.

4. Aggregation may be present in this buffer upon arrival due to the high concentrations of reagents included at the supplied 10X formulation. At times, the aggregation persists despite warming to room temperature. We recommend warming the buffer to 37°C for 15 minutes and mixing to help eliminate the precipitate. Alternatively, diluting the 10X buffer with ddH₂O to at least 5X, warming to 37°C and mixing for 15 minutes will yield a precipitate-free solution. Once diluted, it can be aliquoted and stored at -20°C for future use. Note: If dilution is necessary, we recommend rinsing the 10X buffer bottle several times to ensure all of the precipitates have been captured.

**Storage:** This product is stable for 24 months when stored at -20°C. RIPA Buffer can be stored at 4°C for a short period of time (1-2 weeks).

Please visit www.cellsignal.com for a complete listing of recommended companion products.

**Species Cross-Reactivity Key:**

- H—human
- M—mouse
- R—rat
- Hm—hamster
- Mk—monkey
- Mi—mink
- C—chicken
- Dm—D. melanogaster
- X—Xenopus
- Z—zebrafish
- B—bovine
- Dg—dog
- Pg—pig
- Sc—S. cerevisiae

All—all species expected

Species enclosed in parentheses are predicted to react based on 100% homology.

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SECTION 1. Identification

Product identifier

Product number: 9808
Product name: RIPA Buffer (10X)
UN number: UN1632

Recommended use of the chemical and restrictions on use

For research use only. Not for use in humans.

Uses advised against

This product is not intended for use in humans or animals.

Manufacturer, importer, supplier

Manufacturer address: Cell Signaling Technology, Inc.
1 Corporate Dr.
Danvers, MA 01923
United States
Toll-Free: +1-877-667-2300
Fax: +1-978-667-2400
Website: www.cellsignal.com
Email address: support@cellsignal.com
Company phone number: +1-877-667-2300
Emergency telephone number: 978-867-2300

SECTION 2. Hazard(s) identification

GHS Label elements, including precautionary statements

Signal Word
Danger

Hazard statement(s)
Causes serious eye damage

Classification
This substance is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Prevent eye damage on initial exposure category 1

SECTION 3. Composition/information on ingredients

Chemical Name | CAS No. | Weight %
--- | --- | ---
tetrasodium pyrophosphate | 7722-88-5 | 0.1-1
trometamol | 77-86-1 | 1-5
ethanol | 96-51-3 | 5-10
3-alpha,12-alpha-dihydroxy-5beta-cholan-24-oate | 9055-19-5 | 1-10
3-alpha,12-alphadihydroxy-5beta-cholan-24-oate | 9055-19-5 | 1-10

tetrasodium pyrophosphate: a salt of pyrophosphoric acid.

SECTION 4. First-aid measures

Protective Equipment and Precautions for Firefighters

Eye contact
Rinse thoroughly with plenty of water, also under the eyelids. Keep eye wide open while rinsing.

Skin contact
Wash off immediately with plenty of water for at least 15 minutes. If symptoms persist, call a physician. Immediate medical attention is not required. Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes.

Inhalation
Move to fresh air. If symptoms persist, call a physician. Immediate medical attention is not required. If INHALED: Remove to fresh air and at rest in a position comfortable for breathing.

Ingestion
Immediate medical attention is not required. Rinse mouth. Drink plenty of water. Do NOT induce vomiting. Consult a physician. Do not induce vomiting without medical advice.

Most important symptoms and effects, both acute and delayed
No information available.

Indication of any immediate medical treatment and special treatment needed
Treat symptomatically.

Advice for emergency respondents

General advice
Immediate medical attention is not required. Show this safety data sheet to the doctor in attendance. If symptoms persist, call a physician.

Protection of first-aiders
Use personal protective equipment.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable Extinguishing Media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
CAUTION: Use of water spray when fighting fire may be inefficient.

SECTION 6. Accidental release measures

Personal protective equipment and emergency procedures

For non-emergency personnel
Use personal protective equipment. Avoid contact with the skin and the eyes. Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be used if exposure limits are exceeded.

For emergency responders
When using, do not eat, drink or smoke. Remove and wash contaminated clothing before reusing. Provide regular cleaning of equipment, work area and clothing.

SECTION 7. Handling and storage

Precautions for safe handling

Wear personal protective equipment. Use only in area provided with appropriate exhaust ventilation. Prevent the formation of vapors, mists and aerosols.

Conditions for safe storage, including any incompatibilities


Incompatible products
No information available.

SECTION 8. Exposure controls/personal protection

Control parameters

Occupational exposure [HL values

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>ACGIH TLV</th>
<th>OSHA PEL</th>
<th>NIOSH REL</th>
</tr>
</thead>
</table>

Appropriate engineering controls

Showers, eyewash stations, and ventilation systems.

SECTION 9. Physical and chemical properties

Information on basic physical and chemical properties

Physical state
Liquid

Appearance
Clear

Other
No information available

Color
No information available

Odor Threshold
No information available

Melting point/freezing point
No information available

Boiling point and boiling range
No information available

Flash point
No information available

Evaporation rate
No information available

Flammability (solid, gas)
No information available

Upper Flammability limit
No information available

Lower Flammability limit
No information available

Flash point
No information available

Vapor density
No information available

Relative density
No information available

Solubility
No information available

Solubility in other solvents
No information available

Partition coefficient: n-octanol/water
No information available

Autodigestion temperature
No information available

 Decomposition temperature
No information available

 Explosive properties
No information available

VOC control
No information available

Vapor density
No information available

Density
No information available

SECTION 10. Stability and reactivity

Reactivity
No information available.

Chemical stability
Stable under recommended storage conditions.

Possibility of hazardous reactions
None under normal processing.

Hazardous decomposition products
None under normal processing.
SECTION 11: Toxicological information

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization: No information available.
Sensitization effects: No information available.
Carcinogenicity: No component of this product present at levels greater than or equal to 0.1% is identifiable as probable, possible or confirmed carcinogetic by IARC, ACGIH, NTP, or OSHA.
Reproductive toxicity: No information available.
STOF - single exposure: No information available.
STOF - repeated exposure: No information available.
Chronic Toxicity: Not reported exposure.
Neurological effects: No information available.
Aspiration hazard: No information available.

SECTION 12: Ecological information

Biodegradability: No information available.
Biodegrability in fresh water: No information available.
Biodegrability in marine water: No information available.
Toxicity: 11.03% of the mixture consists of component(s) of unknown hazards to the aquatic environment.

SECTION 13: Disposal considerations

Waste Disposal Methods: Should not be released into the environment. Dispose of in accordance with local regulations.
Disposal considerations: Do not empty into drains; dispose of this material and its container in a safe way.

SECTION 14: Transport information

DOT: UN number: UN0802
UN proper shipping name: Environmentally hazardous substance, liquid, n.o.s.
Transport hazard class(es): 9
Special provisions: 171
Emergency response guide number: 9
IATA: UN number: UN0802
UN proper shipping name: Environmentally hazardous substance, liquid, n.o.s.
Transport hazard class(es): 9
ERG code: 9L

SECTION 15: Regulatory information

Canadian Workplace Hazardous Materials Information System (WHMIS) Classification:

Class D2B - Toxic Material at >= 1%.

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories:

Acute Health Hazard: Yes
Chronic Health Hazard: No
Reproductive Hazard: No
Sudden Release of Pressure Hazard: No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substance regulated as hazardous substances under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, 44 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 302). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated under applicable state right-to-know regulations.

U.S. FIFRA Label Information

This product does not contain any substances regulated as pesticides.

U.S. Commerce Department - Export Administration Regulations Information

This product does not contain any substances regulated under the Chemical/Weapons Convention (CWC).

U.S. Drug Enforcement Administration Information

This product does not contain any controlled substances or regulated substances.