SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Product: BCP Phase Separation Reagent
Cat. No. BP 151

Molecular Research Center, Inc.
5645 Montgomery Rd.
Cincinnati, Ohio 45212
USA 1-888-841-0900
Fax: 513-841-0080

Product Name: BCP Phase Separation Reagent
Application: Phase separation reagent for TRI Reagent RNA extraction reagents
Synonyms: trimethylene bromochloride; 3-bromopropyl chloride; omega-chlorobromopropane; 1-chloro-3-bromopropane (DOT); 3-chloropropyl bromide.
Chemical Formula: C3H6BrCl
Molecular Weight: 157.44

CHEMTREC EMERGENCY NUMBER: Only in the event of an emergency involving a spill, leak, fire exposure or accident. USA: 1-800-424-9300; International: 1-703-527-3887

2. HAZARD IDENTIFICATION

OSHA

Combustible liquid
Harmful by ingestion
Toxic by inhalation

GHS Label elements

Pictogram:

Signal word: Danger

Health Hazard

Hazard Class	Hazard category	Code	Health Hazard Statements
Flammable liquids	Category 3	H226	Flammable liquid and vapor
Acute toxicity, oral	Category 4	H302	Harmful if swallowed
Acute toxicity, inhalation	Category 3	H332	Harmful if inhaled
Germ cell mutagenicity	Category 2	H341	Suspected of causing genetic defects

Code	Precautionary statements
Prevention	
P210	Keep away from heat/sparks/open flames/hot surfaces. No smoking.
P233	Keep container tightly closed.
P235	Keep cool.
P261	Avoid breathing dust/fumes/gas/mist/vapors/spray.
P264	Wash…thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use in a well-ventilated area.
P273	Avoid release to the environment
P280	Wear protective gloves/protective clothing/eye protection/face protection.
Response	
P301+P310	If Swallowed: Call a POISON CENTER or doctor/physician
P301+P330+P331	If Swallowed: Rinse mouth. Do not induce vomiting
P302+P361+P352	If on skin: Remove/Take off all contaminated clothing. Wash with plenty of soap and water.
P306+P363	If on clothing: Wash contaminated clothing before reuse.
P304+P340	If Inhaled: Remove victim to fresh air and keep at rest in a comfortable position 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.
P303+P361+P353	If on skin or hair: Immediately take off all contaminated clothing. Rinse skin with water/shower.
P308+P313	If exposed or concerned: Get medical advice/attention.
P309+P311	If exposed or you feel unwell: Call a POISON CENTER or doctor/physician.
P370+P378	In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Storage	
P403+P233	Store in well-ventilated place. Keep container tightly closed.
Disposal	
P501	Dispose of contents/container to an approved waste disposal plant.

HMIS Classification

Health Hazard 2
Flammability 2
Physical hazards 0
PPE= H

NFPA Rating

Health Hazard 1
Fire 2
Reactivity 0

Potential Health Effects

Inhalation Toxic if inhaled. May cause respiratory track irritation.

Skin Harmful if absorbed through the skin. May cause skin irritation.

Eyes May cause eye irritation.

Ingestion Harmful if swallowed.

3. COMPOSITION/Information on Ingredients

Component	Classification	Concentration
1-Bromo-3-chloropropane	CAS-No. 109-70-6 EINECS No. 203-697-1	> 98 %

4. FIRST AID

CHEMICAL EXPOSURE

EYE CONTACT: Check for and remove any contact lenses. Flush eyes with water for 15 min., holding eyelids open. Obtain medical attention.

SKIN CONTACT: Flush skin with soap and water for 15 min. Remove contaminated clothing and thoroughly wash clothing before reuse. Consult a physician.

INHALATION: Remove from exposure to fresh air immediately. If not breathing, provide oxygen and give artificial respiration if needed. Obtain medical attention.

INGESTION: If swallowed, rinse mouth with water if person is conscious. Do not induce vomiting unless directed so by medical personnel. Obtain medical attention. Loosen tight clothing such as a collar, tie, belt or waistband.

STORAGE: Store in well-ventilated place. Keep container tightly closed.

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

5. FIRE FIGHTING MEASURES

FLASH POINTS: Closed cup 45 ºC (113 ºF)

FIRE HAZARDS: Flammable in the presence of an open flame and sparks at temperature above the flash point.

EXTINGUISHING MEDIA: May be combustible at high temperatures. Extinguishing media appropriate to surrounding fire conditions. Small Fire: Use dry chemical powder. Large Fire: Use water spray, fog or foam. Do not use water jet. Emits toxic fumes under fire conditions (chloride, bromide).

HAZARDOUS COMBUSTION PRODUCTS: Hazardous decomposition products formed under fire conditions. Carbon oxides, hydrogen chloride gas, hydrogen bromide gas.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PROTECTIVE EQUIPMENT FOR SPILL CONDITIONS: Note that accidental releases may be subject to special state or local reporting requirements and other regulatory mandates. Check and comply with local laws and regulations. Do not allow chemical to enter drain. Avoid breathing vapor, mist or gas. Use gloves and other appropriate protective covering to avoid skin contact. Ensure adequate ventilation. Beware of vapors accumulating to form explosive concentrations. Remove all sources of ignition. Use goggles, face shield or other eye protection. Contain spill with an inert adsorbent such as vermiculite, sand or earth. Place spill material in a suitable container and hold for disposal. Wash spill site after pickup is complete.

7. HANDLING AND STORAGE

Store in a cool, dry place in tightly sealed containers. Keep away from heat. Take measures to prevent the buildup of electrostatic charge. Ensure good ventilation at the workplace. Practice good laboratory techniques when handling this substance. After using the chemical, wash hands thoroughly. Use adequate ventilation and avoid breathing vapor, mist or gas. Empty containers pose a fire risk and any residue should be evaporated under a fume hood. Keep away from incompatibles such as oxidizing agents, metals and alkalis.

.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

For routine operations wear safety glasses, latex gloves and a chemical apron to avoid contact with eyes, skin and clothing. Facilities utilizing this chemical should be equipped with an eyewash station and safety shower. Use adequate ventilation to keep airborne concentrations below the permissible exposure limits. (No PELS are listed for this chemical). Wash contaminated clothing before reuse. Wash thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Clear, colorless liquid.
Odor:	Chloroform-like, sweetish odor.
Molecular Weight:	157.44 g/ mole
PH:	N/A
Refractive Index:	1.486
Vapor Pressure:	6.6 mbar @ 20 ºC
Density:	1.592 at 25 ºC (77 ºF) (water = 1)
Boiling point:	145 ºC (293 ºF)
Melting point:	- 59 ºC
Flash point:	Closed Cup 45 ºC (113 ºF)
Solubility:	Insoluble in cold water, hot water 2.24 g/L at 25ºC.
Partition coefficient:	log Pow: 2.2 n-octanol/water
Specific gravity:	1.6 g at 20 ºC

10. STABILITY AND REACTIVITY

Stable under recommended storage conditions.

INCOMPATIBILITIES: Heat, sparks, ignition sources, strong bases, strong oxidizing agents, magnesium, zinc, aluminum.

DECOMBUSTION PRODUCTS: Hydrogen chloride, phosgene, carbon monoxide, carbon dioxide, and hydrogen bromide gas.

11. TOXICOLOGICAL INFORMATION

RTECS# TX4113000 DOT: POISON B, 6.1, III
INHALATION: Toxic if inhaled. Harmful if swallowed.

Rat: Inhalation: LC50=5668 mg/m^3; oral LD50=930 mg/kg; Mouse: oral LD50=1290 mg/kg. LCLo/2H: 7270 mg/m^3.

CARCINOGENICITY: This product is considered to be a carcinogen by IARC, ACGIH, NTP OR OSHA.TARGET ORGAN DATA.
US OSHA Hazard Categories (1-10) Not regulated
To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

12. ECOLOGICAL INFORMATION

ECOTOXICITY: Harmful to fish; LC50 (24 hr) goldfish 75 mg/l- 24 h.

Possibly hazardous short-term degradation products are not likely; however, long-term degradation products are possible.
The products of degradation are as toxic as the product itself.

13. DISPOSAL CONSIDERATIONS

Keep in sealed containers until final disposal. Dispose of in a manner consistent with federal, state and local regulations. Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is 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.

14. TRANSPORTATION INFORMATION

DOT (US)
UN number: 2688 Class: 6.1 Packing group: III; Packing Instruction 655.
Proper shipping name: 1-Bromo-3-chloropropane
Reportable Quantity (RQ):
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN number: 2688 Class: 6.1 Packing group: III EMS-No: F-A, S-A
Proper shipping name: 1-BROMO-3-CHLOROPROPANE
Marine pollutant: No

IATA
UN number: 2688 Class: 6.1 Packing group: III
Proper shipping name: 1-Bromo-3-chloropropane

Land Transportation ADR/RID:
Danger code (Kemler): 60

15. REGULATORY INFORMATION

US Federal Regulations: This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D) Not regulated
CERCLA Hazardous Substance List (40 CFR 302.4) Not regulated
OSHA Hazards Categories (1-10) Not regulated
Combustible Liquid. Toxic by inhalation. Harmful by ingestion.
SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313 Components
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards
Fire Hazard, Acute Health Hazard

Other federal regulations:
Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAP's) List: Not regulated
Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130): Not regulated
Safe Drinking Water Act (SDWA) Not regulated.

US State Regulations
California Controlled Substance. (California Health and Safety Code 11100) Not listed
Massachusetts Right-To-Know Components- Substance List: Not regulated
Pennsylvania Worker and Community Right-T-Know Law Not listed
New Jersey Worker and Community Right-To-Know Act
1-Bromo-3-chloropropane CAS-No. 109-70-6
Rhode Island RTK Not listed
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.

International Inventories

Country	Inventory name	ON Inventory (yes/no) *
Australia	**Australian Inventory of Chemical Substances (AICS)**	**Yes**
Canada	**Domestic Substance List (DSL)**	**Yes**
Canada	**Non-Domestic Substance List (NDSL)**	**No**
China	**Inventory of Existing Chemical Substances in China (IECSC)**	**Yes**
Europe	**European Inventory of Existing Commercial Substances (EINECS)**	**Yes**
Europe	**European List of Notified Chemical Substances (ELINCS)**	**No**
Japan	**Inventory of Existing and New Chemical Substances (ENCS)**	**Yes**
Korea	**Existing Chemical List (ECL)**	**Yes**
New Zealand	**New Zealand Inventory**	**Yes**
Philippines	**Philippine Inventory of Chemicals and Chemical Substances(PICCS)**	**Yes**

*

“Yes” Indicates that components of the product comply with the inventory requirements as outlined by the administrative body. “No” Indicates that the chemical is not listed or exempt from the inventory listing and of the administrative body.

This

16. OTHER INFORMATION

Reviewed by	BW, MJ
Creation date	11/01/07
Revision date	1/01/18

Reason for Revision: Three-year update.

This information is believed to be accurate and represents the information currently available to us. However, we make no warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes.