



Safety Data Sheet

Canada

Section 1. Identification

Product name

Lysis buffer type 9; part of 'PlasmidPrep Mini Spin Kit, 250 purifications'

Catalogue Number

28-9042-70



9 0 2 8 9 0 4 2 7 0

Component Number

9601D

Product type

Liquid.

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

Identified uses

Analytical chemistry.
Laboratory chemicals
Scientific research and development

Consumer use

Supplier Cytiva
Amersham Place
Little Chalfont
Buckinghamshire
HP7 9NA United Kingdom
+44 1494 508000

Importer Cytiva Canada
1055 Vernon Dr
Vancouver BC V6A 3P4
Canada
+1 778-956-2584

In case of emergency

INFOTRAC
Outside of the United States, call 24 Hour number: 001-352-323-3500 (Call Collect)
In the United States, call 24 Hour number: 1-800-535-5053

Section 2. Hazard identification

Classification of the substance or mixture ACUTE TOXICITY (oral) - Category 4
SKIN CORROSION - Category 1
Health Hazards Not Otherwise Classified - Category 1

GHS label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Harmful if swallowed.
Causes severe skin burns and eye damage.
Causes severe digestive tract burns.

Precautionary statements

Prevention

Wear protective gloves, protective clothing and eye or face protection. Do not eat, drink or smoke when using this product. Wash thoroughly after handling.



Response	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor. IF SWALLOWED: Immediately call a POISON CENTER or doctor. Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTER or doctor. Wash contaminated clothing before reuse. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
Storage	Store locked up.
Disposal	Dispose of contents and container in accordance with all local, regional, national and international regulations.
Supplemental label elements	Do not taste or swallow. Wash thoroughly after handling. Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 42%

Section 3. Composition/information on ingredients

Substance/mixture Mixture

Other means of identification Not available.

Ingredient name	Synonyms	% (w/w)	CAS number
guanidinium chloride	guanadine hydrochloride; Guanidine, hydrochloride (1:1); Guanidine, monohydrochloride; Guanidine monohydrochloride; GUANIDINE HCL; GUANIDINE HYDROCHLORIDE; Iminourea hydrochloride; Carbamidine hydrochloride; Aminomethanamide hydrochloride; Aminoformamidine hydrochloride; Salt of hydrogen chloride and guanidine (1:1)	≥30 - ≤60	50-01-1
Acetic acid	Ethanoic acid; Glacial acetic acid; Methanecarboxylic acid; acetic acid, of a concentration of more than 10 per cent, by weight, of acetic acid; acetic acid, anhydrous; acetic acid, of a concentration by weight not exceeding 10 % of acetic acid; ethanoic acid, of a concentration of more than 10 per cent, by weight, of ethanoic acid; E 260; glacial acetic acid; ethanoic acid; ethylacetic acid; vinegar acid; acetic acid glacial; methanecarboxylic acid; ethanoic acid, of a concentration by weight not exceeding 10 % of ethanoic acid; ACETIC ACID GLACIAL; ACETIC ACID, WATER SOLUTIONS	≥10 - ≤30	64-19-7
Potassium acetate	Acetic acid, potassium salt (1:1); Acetic acid, potassium salt; E 261; Potassium ethanoate; Acetic acid potassium salt; Acetic acid salt (Na,K,Li,Ca,Al,Mg); ACETATE, POTASSIUM	≥5 - ≤10	127-08-2

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

Eye contact	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician.
--------------------	--



Inhalation	Get medical attention immediately. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Skin contact	Get medical attention immediately. Call a poison center or physician. Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
Ingestion	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed**Potential acute health effects**

Eye contact	Causes serious eye damage.
Inhalation	No known significant effects or critical hazards.
Skin contact	Causes severe burns.
Ingestion	Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed.

Over-exposure signs/symptoms

Eye contact	Adverse symptoms may include the following: pain watering redness
Inhalation	No specific data.
Skin contact	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	Adverse symptoms may include the following: stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
Specific treatments	No specific treatment.
Protection of first-aiders	No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)**Section 5. Fire-fighting measures****Extinguishing media**

Suitable extinguishing media	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media	None known.

Specific hazards arising from the chemical	In a fire or if heated, a pressure increase will occur and the container may burst.
---	---



Hazardous thermal decomposition products	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides halogenated compounds metal oxide/oxides
Special protective actions for fire-fighters	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
Special protective equipment for fire-fighters	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
Environmental precautions	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and materials for containment and cleaning up

Small spill	Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
Large spill	Stop leak if without risk. Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities	Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.



Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name

Acetic acid

Exposure limits

CA Saskatchewan Provincial (Canada, 4/2021)

STEL 15 minutes: 15 ppm.

TWA 8 hours: 10 ppm.

CA British Columbia Provincial (Canada, 9/2024)

TWA 8 hours: 10 ppm.

STEL 15 minutes: 15 ppm.

CA Ontario Provincial (Canada, 6/2019)

TWA 8 hours: 10 ppm.

STEL 15 minutes: 15 ppm.

CA Quebec Provincial (Canada, 2/2024)

TWAEV 8 hours: 10 ppm.

TWAEV 8 hours: 25 mg/m³.

STEV 15 minutes: 15 ppm.

STEV 15 minutes: 37 mg/m³.

CA Alberta Provincial (Canada, 3/2023)

OEL 8 hours: 10 ppm.

OEL 8 hours: 25 mg/m³.

OEL 15 minutes: 37 mg/m³.

OEL 15 minutes: 15 ppm.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls

If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

Skin protection

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Other skin protection

Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.



Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	Liquid.
Color	Colorless.
Odor	Odorless.
Odor threshold	Not available.
pH	4.2
Melting point/freezing point	Not available.
Boiling point or initial boiling point and boiling range	Not available.

Flash point	[Product does not sustain combustion.]
--------------------	--

Ingredient name	°C	Closed cup		Open cup	
		°F	Method	°C	°F
acetic acid	39	102.2			

Burning time	Not applicable.
Burning rate	Not applicable.
Evaporation rate	Not available.
Flammability	Not available.
Lower and upper explosive (flammable) limits	Not available.

Vapor pressure	Not available.
-----------------------	----------------

Ingredient name	Vapor Pressure at 20°C		Vapor pressure at 50°C	
	mm Hg	kPa	mm Hg	kPa
water	17.5	2.3		
acetic acid	15.59383	2.1		
potassium acetate	0	0		

Relative vapor density	Not available.
Relative density	Not available.

Media	Result	
	cold water	hot water
cold water	Easily soluble	
hot water	Easily soluble	

Solubility in water	Not available.
Partition coefficient: n-octanol/water	Not applicable.

Auto-ignition temperature	Not available.
Ingredient name	°C
potassium acetate	>410
acetic acid	463
	°F
	>770
	865.4
	Method
	EU A.16

Decomposition temperature	Not available.
SADT	Not available.
Viscosity	Not available.
Flow time (ISO 2431)	Not available.

Particle characteristics

Median particle size	Not applicable.
-----------------------------	-----------------

Section 10. Stability and reactivity

Reactivity	No specific test data related to reactivity available for this product or its ingredients.
-------------------	--

Chemical stability	The product is stable.
---------------------------	------------------------

Possibility of hazardous reactions	Under normal conditions of storage and use, hazardous reactions will not occur.
---	---

Conditions to avoid	No specific data.
----------------------------	-------------------

Incompatible materials	No specific data.
-------------------------------	-------------------



Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
---	--

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name

guanidinium chloride

Result

Rat - Oral - LD50

475 mg/kg

Toxic effects: Behavioral - Altered sleep time (including change in righting reflex) Behavioral - Excitement Gastrointestinal - Hypermotility, diarrhea

Acetic acid

Rat - Oral - LD50

3310 mg/kg

Rabbit - Dermal - LD50

1060 mg/kg

Rat - Inhalation - LC50 Vapor

11000 mg/m³ [4 hours]

Rat - Oral - LD50

3250 mg/kg

Conclusion/Summary [Product] Not available.

Skin corrosion/irritation

Not available.

Conclusion/Summary [Product] Not available.

Serious eye damage/eye irritation

Not available.

Conclusion/Summary [Product] Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary [Product] Not available.

Respiratory or skin sensitization

Not available.

Skin

Conclusion/Summary [Product] Not available.

Respiratory

Conclusion/Summary [Product] Not available.

Germ cell mutagenicity

Not available.

Conclusion/Summary [Product] Not available.

Carcinogenicity



Not available.

**Conclusion/Summary
[Product]** Not available.

Reproductive toxicity

Not available.

**Conclusion/Summary
[Product]** Not available.

Specific target organ toxicity (single exposure)

Not available.

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Information on the likely routes of exposure Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.

Potential acute health effects

Eye contact	Causes serious eye damage.
Inhalation	No known significant effects or critical hazards.
Skin contact	Causes severe burns.
Ingestion	Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact	Adverse symptoms may include the following: pain watering redness
Inhalation	No specific data.
Skin contact	Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure

Short term exposure

Potential immediate effects Not available.
Potential delayed effects Not available.

Long term exposure

Potential immediate effects Not available.
Potential delayed effects Not available.

Potential chronic health effects

Not available.

**Conclusion/Summary
[Product]** Not available.
General No known significant effects or critical hazards.
Carcinogenicity No known significant effects or critical hazards.



Mutagenicity	No known significant effects or critical hazards.
Reproductive toxicity	No known significant effects or critical hazards.

Numerical measures of toxicity**Acute toxicity estimates**

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Solution III - 9601D (Lysis buffer type 9) - GROUP guanidinium chloride	1043.6	3040.4	N/A	31.6	N/A
Acetic acid	475	N/A	N/A	N/A	N/A
Potassium acetate	3310	1060	N/A	11	N/A
	3250	N/A	N/A	N/A	N/A

Section 12. Ecological information**Toxicity**

Product/ingredient name	Result
Acetic acid	Acute - LC50 - Marine water Crustaceans - Brine shrimp - <i>Artemia salina</i> 32 mg/l [48 hours] <u>Effect:</u> Mortality
	Acute - LC50 - Fresh water Fish - Bluegill - <i>Lepomis macrochirus</i> 75 ppm [96 hours] <u>Effect:</u> Mortality
Potassium acetate	Acute - LC50 - Fresh water Fish - Fathead minnow - <i>Pimephales promelas</i> 298 mg/l [96 hours] <u>Effect:</u> Mortality
	Acute - LC50 - Fresh water Crustaceans - Water flea - <i>Ceriodaphnia dubia</i> 313 mg/l [48 hours] <u>Effect:</u> Mortality

Conclusion/Summary [Product]	Not available.
--	----------------

Persistence and degradability

Not available.

Conclusion/Summary [Product]	Not available.
--	----------------

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
guanidinium chloride	-	-	Not readily
Acetic acid	-	>60%; 28 day(s)	Readily
Potassium acetate	-	-	Readily

Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
guanidinium chloride	-1.7	-	Low
Acetic acid	-0.17	3.16	Low
Potassium acetate	-3.72	3.162	Low

Mobility in soil

Soil/Water partition coefficient Not available.

Other adverse effects	No known significant effects or critical hazards.
------------------------------	---



Section 13. Disposal considerations

Disposal methods

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	TDG Classification	DOT Classification	ADR/RID	IMDG	IATA
UN number	UN2790	UN2790	UN2790	UN2790	UN2790
UN proper shipping name	Acetic acid solution more than 10% but less than 50% acid, by weight (acetic acid)	Acetic acid solution more than 10% but less than 50% acid, by weight (acetic acid)	Acetic acid solution more than 10% but less than 50% acid, by weight (acetic acid)	Acetic acid solution more than 10% but less than 50% acid, by weight (acetic acid)	Acetic acid solution more than 10% but less than 50% acid, by weight (acetic acid)
Transport hazard class(es)	8	8	8	8	8
Packing group	III	III	III	III	III
Environmental hazards	No.	No.	No.	No.	No.
Additional information	Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8). Reportable quantity - 27777.8 lbs / 12611.1 kg. Package sizes shipped in quantities less than the product reportable quantity are not subject to the RQ (reportable quantity) transportation requirements.			-	-
Special precautions for user	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.				
Transport in bulk according to IMO instruments	Not available.				

Section 15. Regulatory information

Canadian lists

Canadian NPRI None of the components are listed.

CEPA Toxic substances None of the components are listed.

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Canada	All components are listed or exempted.
United States	All components are active or exempted.

Section 16. Other information**History**

Date of printing	2/20/2026
Date of issue/Date of revision	2/20/2026
Date of previous issue	7/22/2025
Version	8.05 sds_author@cytiva.com

Key to abbreviations	ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals HPR = Hazardous Products Regulations IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) N/A = Not available UN = United Nations
-----------------------------	---

Procedure used to derive the classification

	Classification	Justification
ACUTE TOXICITY (oral) - Category 4		Calculation method
SKIN CORROSION - Category 1		Calculation method
Health Hazards Not Otherwise Classified - Category 1		Calculation method

References

Not available.



Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.