

Safety Data Sheet

Canada

Section 1. Identification

Product name

Glutaraldehyde; part of 'ECL™ direct nucleic acid labelling and detection system'

Catalogue Number

RPN3000



Component Number

NIF820

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

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

SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A
RESPIRATORY SENSITIZATION - Category 1B
SKIN SENSITIZATION - Category 1A

GHS label elements

Hazard pictograms



Signal word

Danger

Hazard statements

Causes serious eye irritation.
Causes skin irritation.
May cause allergy or asthma symptoms or breathing difficulties if inhaled.
May cause an allergic skin reaction.

Precautionary statements

Prevention

Wear protective gloves. Wear eye or face protection. Wear respiratory protection. Avoid breathing vapor. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace.



| | |
|------------------------------------|--|
| Response | IF INHALED: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER or physician. IF ON SKIN: Wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical attention. |
| Storage | Not applicable. |
| Disposal | Dispose of contents and container in accordance with all local, regional, national and international regulations. |
| Supplemental label elements | Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 1.5% |

Section 3. Composition/information on ingredients

| | |
|--------------------------------------|----------------|
| Substance/mixture | Mixture |
| Other means of identification | Not available. |

| Ingredient name | Synonyms | % (w/w) | CAS number |
|-----------------|---|---------|---------------|
| Glutaraldehyde | glutaraldehyde; 1,5-pentanedial; Pentanedial; Pentanedial, (glutaraldehyde); Glutaric dialdehyde; pentane-1,5-dial; glutardialdehyde; pentan-1,5-dial; GLUTARIC ACID DIALDEHYDE; 1,5-PENTANEDIONE; gluteral | ≥1 - ≤5 | CAS: 111-30-8 |

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 | 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. Get medical attention. |
| Inhalation | 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. Get medical attention. If necessary, call a poison center or physician. 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 the event of any complaints or symptoms, avoid further exposure. |
| Skin contact | Wash with plenty of soap and 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. Get medical attention. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse. |
| Ingestion | Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. 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. Get medical attention if adverse health effects persist or are severe. 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 irritation. |
| Inhalation | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin contact | Causes skin irritation. May cause an allergic skin reaction. |
| Ingestion | No known significant effects or critical hazards. |

Over-exposure signs/symptoms

| | |
|--------------------|--|
| Eye contact | Adverse symptoms may include the following: pain or irritation watering redness |
|--------------------|--|



| | |
|---------------------|--|
| Inhalation | Adverse symptoms may include the following: wheezing and breathing difficulties asthma |
| Skin contact | Adverse symptoms may include the following: irritation redness |
| Ingestion | No specific data. |

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

| | |
|-----------------------------------|---|
| Notes to physician | Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled. |
| 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

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. Avoid breathing 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). Persons with a history of skin sensitization problems or asthma, allergies or chronic or recurrent respiratory disease should not be employed in any process in which this product is used. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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. 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 | Exposure limits |
| Glutaraldehyde | CA Saskatchewan Provincial (Canada, 4/2021) Sensitizer. CEIL: 0.05 ppm. CA British Columbia Provincial (Canada, 9/2024) Skin sensitizer , Inhalation sensitizer. C: 0.05 ppm. CA Ontario Provincial (Canada, 6/2019) Ceiling Limit: 0.05 ppm. CA Quebec Provincial (Canada, 2/2024) Skin sensitizer , Inhalation sensitizer. C: 0.05 ppm. CA Alberta Provincial (Canada, 3/2023) C: 0.2 mg/m³. C: 0.05 ppm. |

Biological exposure indices

No exposure indices known.

| | |
|----------------------------------|--|
| Appropriate engineering controls | Use only with adequate ventilation. 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. Contaminated work clothing should not be allowed out of the workplace. 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. |
| 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 | Not available. |
| Odor threshold | Not available. |
| pH | Not available. |
| Melting point/freezing point | Not available. |
| Boiling point or initial boiling point and boiling range | Not available. |
| Flash point | Not applicable. |
| 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 | Method | mm Hg | kPa | Method |
| | water | 17.5 | 2.3 | | | | |
| | glutaral | 15.00128 | 2 | | | | |
| Relative vapor density | Not available. | | | | | | |
| Relative density | Not available. | | | | | | |

Solubility(ies)

| Media | Result |
|------------|----------------|
| cold water | Easily soluble |
| hot water | Easily soluble |

| | |
|--|----------------|
| Solubility in water | Not available. |
| Partition coefficient: n-octanol/ water | Not available. |
| Auto-ignition temperature | Not available. |
| 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 | Result |
|-------------------------|--|
| Glutaraldehyde | Rat - Oral - LD50 134 mg/kg Rat - Inhalation - LC50 Vapor 480 mg/m³ [4 hours] |

| | |
|-------------------------------------|----------------|
| 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. |
|---|----------------|

Classification

| Product/ingredient name | IARC | NTP | ACGIH |
|--------------------------------|-------------|------------|--------------|
| Glutaraldehyde | - | - | A4 |

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. |
|---|--|

Potential acute health effects

| | |
|---------------------|--|
| Eye contact | Causes serious eye irritation. |
| Inhalation | May cause allergy or asthma symptoms or breathing difficulties if inhaled. |
| Skin contact | Causes skin irritation. May cause an allergic skin reaction. |
| Ingestion | No known significant effects or critical hazards. |

Symptoms related to the physical, chemical and toxicological characteristics

| | |
|---------------------|--|
| Eye contact | Adverse symptoms may include the following: pain or irritation watering redness |
| Inhalation | Adverse symptoms may include the following: wheezing and breathing difficulties asthma |
| Skin contact | Adverse symptoms may include the following: irritation redness |
| Ingestion | No specific data. |

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

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

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)**Glutaraldehyde - NIF820 - GROUP
Glutaraldehyde8933.3
134N/A
N/AN/A
N/A33.3
0.5N/A
N/A**Section 12. Ecological information****Toxicity****Product/ingredient name**

Glutaraldehyde

Result**Acute - EC50 - Fresh water**

US EPA

Daphnia - Water flea - *Daphnia magna*

Age: <24 hours

14.6 ppm [48 hours]

Effect: Intoxication

Acute - LC50 - Fresh water

US EPA

Fish - Fathead minnow - *Pimephales promelas*

Size: 12.9 mm

5.4 ppm [96 hours]

Effect: Mortality

Acute - EC50 - Fresh water

US EPA

Algae - Green algae - *Raphidocelis subcapitata*

0.31 ppm [96 hours]

Effect: Population

**Conclusion/Summary
[Product]**

Not available.

Persistence and degradability

Not available.

**Conclusion/Summary
[Product]**

Not available.

Product/ingredient name

Glutaraldehyde

Aquatic half-life

-

Photolysis

-

Biodegradability

Not readily

Bioaccumulative potential**Product/ingredient name**

Glutaraldehyde

LogP_{ow}

-0.36

BCF

-

Potential

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 | Not regulated. | Not regulated. | Not regulated. | Not regulated. | Not regulated. |
| UN proper shipping name | - | - | - | - | - |
| Transport hazard class(es) | - | - | - | - | - |
| Packing group | - | - | - | - | - |
| Environmental hazards | No. | No. | No. | No. | No. |
| Additional information | - | - | - | - | - |
| 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 listed or exempted. |



Section 16. Other information

History

Date of printing 2/12/2026
Date of issue/Date of revision 2/12/2026
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Version 6.02
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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 |
|---|--------------------|
| SKIN IRRITATION - Category 2 | Calculation method |
| EYE IRRITATION - Category 2A | Calculation method |
| RESPIRATORY SENSITIZATION - Category 1B | Calculation method |
| SKIN SENSITIZATION - Category 1A | Calculation method |

References Not available.



Indicates information that has changed from previously issued version.

Notice to reader

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