

Safety Data Sheet

SECTION 1: Identification

Contact information

General



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Cambridge, MA 02138
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Emergency telephone number

Chemtrec (24-hour availability):
+1 (800) 424-9300 (USA and Canada);
+1 (703) 527-3887 (International; collect calls accepted)

| | |
|--|--|
| Product identifier | Hybridization Buffer, BULK |
| Product number | 20300025; 20300026; 20300027; 2020028; 2030029; 2030030; 2030031; 2030032; 2030033; 20200268; 2030034; 2030035; 2030036 |
| Trade name | Not applicable |
| Chemical family | Mixture |
| Recommended uses and restrictions | Reagent for research and development purposes only. |
| Note | This SDS is written to address potential worker health and safety issues associated with the handling of the formulated product/mixture. Workers manufacturing this product/mixture should consult the SDS of each hazardous ingredient for hazard information and handling recommendations. This SDS will be revisited if more data become available. |

SECTION 2: Hazard(s) identification

Classification of the substance or mixture

Skin corrosion/irritation Category 2

Causes skin irritation.

Serious eye damage/eye irritation Category 2

Causes serious eye irritation

Specific target organ toxicity (single exposure) Category 3

May cause respiratory irritation

Label elements

GHS Hazard pictograms



GHS Signal word

Warning

GHS Hazard statements

H315 - Causes skin irritation.
H319 - Causes serious eye irritation
H335 - May cause respiratory irritation.

GHS Precautionary statements

P261 - Avoid breathing mist or vapor. P264 - Wash hands thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P280 - Wear protective gloves/eye protection/face protection. P302 + P352 - IF ON SKIN: Wash with plenty of soap and water. P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P312 - Call a Poison Center or doctor/physician if you feel unwell. P362 - Take off contaminated clothing. P403 + P233 - Store in a well-ventilated place. Keep container tightly closed. P405 - Store locked up. P501 - Dispose of contents/container to location in accordance with local/regional/national/international regulations.

Other hazards

No data were available for the mixture. The following data describe the hazards associated with the active ingredient and/or the individual ingredients where applicable.

Note

This mixture is classified as hazardous under GHS as implemented by Regulation EC No 1272/2008 (EU CLP), WHMIS 2015 (Health Canada), and Hazard Communication Standard No. 1910.1200 (US OSHA).

SECTION 3: Composition/Information on ingredients

| Ingredient | CAS number | EINECS/ELINCS# | Amount | GHS classification |
|---|------------|----------------|--------|--|
| Ethylene Carbonate | 96-49-1 | 202-510-0 | < 15 % | Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335 |
| Oligodeoxyribonucleic acid (unmodified, modified) | N/A | N/A | < 5 % | Not classified |

Note The ingredients listed above are considered hazardous. Oligodeoxyribonucleic acid (DNA) is not classified but is listed as it is considered pharmacologically active. Amounts are listed as ranges; the exact percentage of composition is withheld as a trade secret. The remaining components are non-hazardous and/or present at amounts below reportable limits. See Section 16 for full text of GHS classifications.

SECTION 4: First-aid measures

Description of first aid measures

Immediate medical attention and special treatment, if necessary Yes.

Inhalation

Immediately move exposed subject to fresh air. If not breathing, give artificial respiration. If breathing is labored, administer oxygen. Immediately notify medical personnel and supervisor.

Skin contact

Wash exposed area with soap and water and remove contaminated clothing/shoes. If irritation occurs or persists, notify medical personnel and supervisor.

Eye contact

If easy to do, remove contact lenses, if worn. Immediately flush eyes with copious quantities of water for at least 15 minutes. If irritation occurs or persists, notify medical personnel and supervisor.

Ingestion

If swallowed, call a physician immediately. Do not induce vomiting unless directed by medical personnel. Do not give anything to drink unless directed by medical personnel. Never give anything by mouth to an unconscious person. Notify medical personnel and supervisor.

Most Important Symptoms/Effects

Medical conditions aggravated by exposure: None known or reported. Treat symptomatically and supportively.

Expected Symptoms/Effects, Acute and Delayed

See Sections 2 and 11

SECTION 5: Fire-fighting measures

Suitable (and unsuitable) extinguishing media**Suitable extinguishing media**

Use water spray (fog), foam, dry powder, or carbon dioxide, as appropriate for surrounding fire and materials.

Specific hazards arising from the chemical

No information identified. May emit carbon monoxide, carbon dioxide, oxides of nitrogen and other nitrogen-containing compounds.

Fire hazard

No information identified. As product is an aqueous solution, it is not expected to be flammable.

Explosion hazard

No information identified. As product is an aqueous solution, it is not expected to be explosive.

Special protective equipment and precautions for fire-fighters**Firefighting instructions**

In case of fire in the surroundings: use the appropriate extinguishing agent. Wear full protective clothing and an approved, positive pressure, self-contained breathing apparatus. Decontaminate all equipment after use.

SECTION 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures**Protective equipment**

If product is released or spilled, take proper precautions to minimize exposure by using appropriate personal protective equipment (see Section 8). Area should be adequately ventilated.

Emergency procedures

Do not breathe vapors/mist/spray.

Environmental precautions

Do not empty into drains. Avoid release to the environment.

Methods and material for containment and cleaning up

Methods for cleaning up

DO NOT CAUSE MATERIAL TO BECOME AIRBORNE. For small spills, soak up material with absorbent, e.g. paper towels. For large spills, cordon off spill area and minimize the spreading of spilled material. Soak up material with absorbent. Collect spilled material, absorbent, and rinse water into suitable containers for proper disposal in accordance with applicable waste disposal regulations (see Section 13). Decontaminate the area twice with an appropriate solvent (see Section 9).

Other information

Dispose of materials or solid residues at an authorized site.

Reference to other sections

See Sections 8 and 13 for more information.

SECTION 7: Handling and storage

Precautions for safe handling

Follow recommendations for handling bulk formulated biochemical reagents (i.e. use of engineering controls and/or other personal protective equipment if needed). Avoid contact with eyes, skin and other mucous membranes. Wash thoroughly after handling. Do not breathe vapor/mist/spray.

Conditions for safe storage, including any incompatibilities

Storage conditions

Store at NMT -20° C, away from incompatible materials. Store protected from light.

Storage temperature

≤ -20 °C

Specific end use(s)

Research and development.

SECTION 8: Exposure controls/personal protection

Control parameters/Occupational Exposure Limits

| Name | Issuer | Value |
|---|-------------------|-------------------|
| Ethylene Carbonate | No data available | No data available |
| Oligodeoxyribonucleic acid (unmodified, modified) | No data available | No data available |

Appropriate engineering controls

Selection and use of containment devices and personal protective equipment should be based on a risk assessment of exposure potential. Use local exhaust and/ or enclosure at aerosol/mist-generating points. Use engineered local exhaust ventilation (LEV) and/or enclosure for procedures where aerosolization may occur such as opened transfers, pumping, and spraying. Solutions can be handled outside a containment system or without LEV during procedures with no potential for aerosolization. All containers for solutions and slurries must be covered while being transferred.

Respiratory protection

Choice of respiratory protection should be appropriate to the task and the level of existing engineering controls. At a minimum, a tight-fitting full-face respirator with HEPA filters is required when performing aerosol generating operations. A powered air-purifying respirator (PAPR) with HEPA filters and head cover is required for spill cleanup.

Hand protection

Wear nitrile or other impervious gloves if skin contact is possible. When the material is diluted in an organic solvent, wear gloves that provide protection against the solvent.

Eye protection

Wear safety glasses with side shields, chemical splash goggles, or full face shield, if necessary. Base the choice of protection on the job activity and potential for contact with eyes or face. An emergency eye wash station should be available.

Skin and body protection

Wear disposable coveralls appropriate to the task, booties, and safety glasses with side shields. Ensure gloves are protective against solvents in use. Protective garments (coveralls, disposable coveralls, lab coats) are not to be worn in common areas (e.g., cafeterias) or out-of-doors. Employees must be trained in proper gowning and degowning practices.

Other protective measures

Wash hands in the event of contact with material, especially before eating, drinking or smoking. Protective equipment is not to be worn outside the work area (e.g., in common areas or out-of-doors).

Environmental exposure controls

Avoid release to the environment and operate within closed systems wherever practicable. Air and liquid emissions should be directed to appropriate pollution control devices. In case of spill, do not release to drains. Implement appropriate and effective emergency response procedures to prevent release or spread of contamination and to prevent inadvertent contact by personnel.

SECTION 9: Physical and chemical properties

| | |
|----------------|--------------------------|
| Physical state | Liquid |
| Appearance | Clear |
| Formula | Not applicable (Mixture) |
| Molecular mass | Not applicable (Mixture) |
| Color | Colorless |
| Odor | Odorless |
| Odor threshold | No data available |
| pH | No data available |
| Melting point | Not applicable |

| | |
|---|-------------------------------------|
| Freezing point | No data available |
| Boiling point | No data available |
| Flash point | No data available |
| Relative evaporation rate (butyl acetate=1) | No data available |
| Flammability (solid, gas) | No data available |
| Vapor pressure | No data available |
| Relative vapor density at 20 °C | No data available |
| Relative density | No data available |
| Solubility | Soluble in water (aqueous solution) |
| Log Pow | No data available |
| Auto-ignition temperature | No data available |
| Decomposition temperature | No data available |
| Viscosity, kinematic | No data available |
| Viscosity, dynamic | No data available |
| Explosion limits | No data available |
| Explosive properties | No data available |
| Oxidizing properties | No data available |

SECTION 10: Stability and reactivity

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|---|--|
| Reactivity | The product is non-reactive under normal conditions of use, storage and transport. |
| Chemical stability | Stable under normal conditions. |
| Possibility of hazardous reactions | No dangerous reactions known under normal conditions of use. |
| Conditions to avoid | None under recommended storage and handling conditions (see section 7). |
| Incompatible materials | Protect from light. |
| Hazardous decomposition products | Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

SECTION 11: Toxicological information

Likely routes of exposure May be absorbed by inhalation, skin contact and ingestion.

Toxicological information

Acute toxicity

| Component | Type | Dose |
|-----------|------|------|
|-----------|------|------|

| | | |
|--------------------|--------------------|-----------------|
| Ethylene Carbonate | LD50 Oral rat | 10 g/kg |
| | LD50 Dermal rabbit | >3 g/kg (6 hrs) |

| | | |
|--|-------------------|-------------------|
| Oligodeoxyribonucleic acid (unmodified, modified) | No data available | No data available |
|--|-------------------|-------------------|

Additional information

No data available

Serious eye damage/irritation

No data available

Skin corrosion/irritation

Ethylene carbonate may cause eye/skin/respiratory tract irritation.

Sensitization

No data available

STOT-single exposure

No data available

STOT-repeated exposure

Repeated parenteral exposure of mice and rats to moderate doses of various oligonucleotides led to pro-inflammatory effects. Such effects were not reported in monkeys in similar studies.

Reproductive toxicity

Oligonucleotides are not likely to adversely affect reproduction

Developmental toxicity

Oligonucleotides are not likely to adversely affect embryo/fetal development

Pregnant rats were administered oral doses of ethylene carbonate on gestation days 6-15 at dose levels of 750, 1500, and 3000 mg/kg/day; increased fetal alterations were observed in the highest dose groups. The alterations included skeletal variations in the vertebrae and sternbrae and delayed ossification of sternbrae in the 1500 and 3000 mg/kg/day groups. These alterations were secondary to significant decreases in fetal body weights at 1500 and 3000 mg/kg/day. Maternal toxicity occurred in the highest dose group. No significant differences were observed in number of implantations, copora lutea, viable fetuses, late resorptions, or pre- or post-implantation losses

Genotoxicity

Oligonucleotides tested in a battery of *in vitro* and *in vivo* genotoxicity studies were negative

Carcinogenicity

No data available. None of the components of the mixture present at levels greater than or equal to 0.1% are listed by NTP, IARC, ACGIH or OSHA as a carcinogen

Aspiration hazard
Experience with humans

No data available
See "Section 2 - Other Hazards".

SECTION 12: Ecological information

| Toxicity | | |
|---|--|-------------------|
| Component | Type | Concentration |
| Formamide | No data available | No data available |
| Oligodeoxyribonucleic acid (unmodified, modified) | No data available | No data available |
| Persistence and degradability | No data available. | |
| Bioaccumulative potential | No data available. | |
| Mobility in soil | No data available | |
| Results of PBT assessment | No data available | |
| Other adverse effects | No data available | |
| Note | The environmental characteristics of this product/mixture have not been fully investigated. Releases to the environment should be avoided. | |

SECTION 13: Disposal considerations

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|-------------------------|--|
| Waste treatment methods | Used product should be disposed of according to local, state, and federal regulations. All wastes containing the material should be properly labeled. Dispose of wastes in accordance to prescribed federal, state, and local guidelines, e.g, appropriately permitted chemical waste incinerator. Rinse waters resulting from spill cleanups should be discharged in an environmentally safe manner, e.g, appropriately permitted municipal or on-site wastewater treatment facility. |
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SECTION 14: Transport information

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| Transport | Based on the available data, this product/mixture is not regulated as a hazardous material/dangerous good under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG. |
| UN number | None assigned. |
| UN proper shipping name | None assigned. |
| Transport hazard class(es) (DOT) | None assigned. |
| Packing group | None assigned. |
| Marine pollutant | Based on the available data, this product/mixture is not regulated as an environmental hazard or a marine pollutant. |
| Special transport precautions | Avoid release to the environment. |
| Transport in bulk according to Annex II of Marpol and the IBC Code | Not applicable |

SECTION 15: Regulatory information

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| Safety, health and environmental regulations/legislation specific for the substance or mixture | This SDS generally complies with the requirements listed under current guidelines in the US, EU and Canada. Consult your local or regional authorities for more information. |
| Chemical safety assessment | No chemical safety assessment has been carried out. |
| TSCA | All components of this product are listed as active, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory. |
| SARA Section 313 - Emission Reporting | This substance or mixture is not known to contain a toxic chemical or chemicals in excess of the applicable de minimis concentration as specified in 40 CFR §372.38(a) subject to the reporting requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372. |
| California Proposition 65 | California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm. |
| Additional information | This SDS generally complies with the requirements listed under current guidelines in the US, EU and Canada. Consult your local or regional authorities for more information. |

SECTION 16: Other information

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| Full text of H phrases and GHS classification | <p>Skin Irrit. 2 – Skin corrosion/irritation Category 2. Eye Irrit. 2 - Serious eye damage/eye irritation Category 2. STOT SE 2 - Specific target organ toxicity (single exposure) Category 3. H315 - Causes skin irritation. H319 - Causes serious eye irritation. H335 - May cause respiratory tract irritation.</p> |
| Data sources | Information from published literature and internal company data. |
| Abbreviations and acronyms | <p>ACGIH - American Conference of Governmental Industrial Hygienists; ADR/RID - European Agreement Concerning the International Carriage of Dangerous Goods by Road/Rail; AIHA - American Industrial Hygiene Association; CAS# - Chemical Abstract Services Number; CLP - Classification, Labelling, and Packaging of Substances and Mixtures; DNEL - Derived No Effect Level; DOT - Department of Transportation; EINECS - European Inventory of New and Existing Chemical Substances; ELINCS - European List of Notified Chemical Substances; EU - European Union; GHS - Globally Harmonized System of Classification and Labeling of Chemicals; IARC - International Agency for Research on Cancer; IDLH - Immediately Dangerous to Life or Health; IATA - International Air Transport Association; IMDG - International Maritime Dangerous Goods; LOEL - Lowest Observed Effect Level; LOAEL - Lowest Observed Adverse Effect Level; NIOSH - The National Institute for Occupational Safety and Health; NMT - Not More Than; NOEL - No Observed Effect Level; NOAEL - No Observed Adverse Effect Level; NTP - National Toxicology Program; OEL - Occupational Exposure Limit; OSHA - Occupational Safety and Health Administration; PBT - Persistent, Bioaccumulative, and Toxic; PNEC - Predicted No Effect Concentration; SARA - Superfund Amendments and Reauthorization Act; STOT - Specific Target Organ Toxicity; STEL - Short Term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System</p> |
| Issue date | February 2024 |
| Current revision | 1.2 |
| Indication of changes | This is the third version of this SDS |
| Disclaimer | <p>The above information is based on data available to us and is believed to be correct. Since the information may be applied under conditions beyond our control and with which we may be unfamiliar, we do not assume any responsibility for the results of its use and all persons receiving it must make their own determination of the effects, properties and protections which pertain to their particular conditions. No representation, warranty, or guarantee, express or implied (including a warranty of fitness or merchantability for a particular purpose), is made with respect to the materials, the accuracy of this information, the results to be obtained from the use thereof, or the hazards connected with the use of the material. Caution should be used in the handling and use of the material because it is a biochemical reagent. The above information is offered in good faith and with the belief that it is accurate. As of the date of issuance, we are providing all information relevant to the foreseeable handling of the material. However, in the event of an adverse incident associated with this product, this Safety Data Sheet is not, and is not intended to be, a substitute for consultation with appropriately trained personnel.</p> |