# Safety Data Sheet

## **SECTION 1: Identification**

## Contact information General



Vizgen, Inc. 61 Moulton St.

Cambridge, MA 02138 Main: +1 (833) 222-8206 E-mail: info@vizgen.com

Emergency telephone number

Chemtrec (24-hour availability): +1 (800) 424-9300 (USA and Canada);

+1 (703) 527-3887 (International; collect calls accepted)

Product identifier Gel Embedding Premix
Product number 20300004; 20300118
Trade name Not applicable
Chemical family Mixture

Recommended uses and restrictions

Note

Reagent for research and development purposes only.

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 bazardus ingredient for hazard information and handling.

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 sensitization, Category 1
May cause an allergic skin reaction
Germ cell mutagenicity Category 1B
May cause genetic defects

Carcinogenicity Category 1B

May cause cancer

Reproductive toxicity Category 2

Suspected of damaging fertility or the unborn child

Specific target organ toxicity (repeated exposure) Category 1

Causes damage to organs (liver, kidneys, peripheral and central nervous systems) through prolonged or repeated exposure

Label elements

**GHS Hazard pictograms** 





GHS Signal word
GHS Hazard statements

Danger

H317 - May cause an allergic skin reaction

H340 - May cause genetic defects

H350 - May cause cancer

H361f - Suspected of damaging fertility

H372 - Causes damage to organs (liver, kidneys, peripheral and central nervous systems)

through prolonged or repeated exposure

#### **GHS Precautionary statements**

P201 - Obtain special instructions before use. P260 - Do not breathe dust/fume/gas/mist/vapors/spray. P261 - Avoid breathing dust/fume/gas/mist/vapors/spray. P264 - Wash hands, forearms and face thoroughly after handling. P270 - Do not eat, drink or smoke when using this product. P272 - Contaminated work clothing must not be allowed out of the workplace. P280 - Wear protective gloves/protective clothing/eye protection/face protection. P302+P352 - If on skin: Wash with plenty of water. P308+P313 - If exposed or concerned: Get medical advice/attention. P314 - Get medical advice/attention if you feel unwell. P333+P313 - If skin irritation or rash occurs: Get medical advice/attention. P363 -Wash contaminated clothing before reuse. P405 - Store locked up. P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation.

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.

Acrylamide is toxic and a skin, eye, and respiratory tract iirritant. Acrylamide poisoning is associated with irritation of the skin and mucous membranes as well as systemic effects upon central, peripheral, and autonomic nervous systems. Local irritation of the skin or mucous membranes is characterized by blistering and desquamation of the skin of the hands (palms) and feet (soles) combined with blueness of the hands and feet. Effects on the central nervous system (CNS) are characterized by abnormal fatigue, sleepiness, memory difficulties, and dizziness. Truncal ataxia is a characteristic feature, sometimes combined with nystagmus (involuntary eye movements) and slurred speech. Excessive sweating in the limbs/extremities is a common symptom. Sign of CNS and local skin involvement may precede peripheral neuropathy by as much as several weeks. Peripheral neuropathy can involve loss of tendon reflexes, impairment of vibration sense, loss of other sensation, and muscular wasting in peripheral parts of the extremities. Nerve biopsy shows loss of large diameter nerve fibers as well as regenerating fibers. Autonomic nervous system involvement is evidenced by excessive sweating, peripheral vasodilation, and difficulties in micturition/defecation.

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   |
|------------|------------|----------------|--------|--|
| Acrylamide | 79-06-1    | 201-173-7      | < 5 %  | Acute Tox. 3 (Oral), H301 Acute Tox. 3 (Dermal), H311 Acute Tox. 4 (Inhalation), H332 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Skin Sens. 1, H317 Muta. 1B, H340 Carc. 1B, H350 Repr. 2, H361f STOT RE 1, H372 |

Note

Note

The ingredients listed above are considered hazardous. GHS classifications of acrylamide are based on the classification in EU - CLP Annex VI - Table 3.1. Amounts are listed as ranges; the exact percentage of composition is withheld as a trade secret. The remaining components of this product are non-hazardous and/or present in formulation 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

Inhalation

Skin contact

Eye contact

Yes.

If experiencing respiratory symptoms: Call a poison center or a doctor. 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.

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

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. 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.

Ingestion

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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

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**As product is an aqueous solution, it is not expected to be flammable. **Explosion hazard**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.

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 refrigerated. Store protected from light.

Storage temperature ≤ 4 °C

**Specific end use(s)** Research and development.

#### **SECTION 8: Exposure controls/personal protection**

#### Control parameters/Occupational Exposure Limits

| Name       | Issuer                             | Value  |
|------------|------------------------------------|--|
| Acrylamide | AT - MAK [mg/m³]                   | 0.03 mg/m³ (einatembare Fraktion,f,H,Sh)                           |
|            | AT - MAK Short time value [mg/m³]  | 0.12 mg/m³ (einatembare Fraktion,f,H,Sh)<br>max. 4x15 min./Schicht |
|            | BE - Limit value [mg/m³]           | 0.03 mg/m³   |
|            | CH - VME [mg/m³]                   | 0.03 mg/m³   |
|            | CZ - Exposure limits (PEL) (mg/m³) | 0.1 mg/m³  |
|            | DK - Grænseværdi (8 timer) (mg/m³) | 0.03 mg/m³   |
|            | DK - Grænseværdi (STEL) (mg/m³)    | 0.06 mg/m³   |
|            | ES - VLA-ED (mg/m³)                | 0.03 mg/m³   |
|            | FI - HTP-arvo (8h) (mg/m³)         | 0.03 mg/m³   |
|            | FI - HTP-arvo (15 min)             | 0.9 mg/m³  |
|            | FR - VME [mg/m³]                   | 0.1 mg/m³  |
|            | HU - MK (OEL C)                    | 0.03 mg/m³   |

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| 0.1 mg/m³                                |
|--|
| 0.03 mg/m³                               |
| 0.03 mg/m³                               |
| 0.1 mg/m³                                |
| 0.1 mg/m³                                |
| 0.1 mg/m³                                |
| 0.03 mg/m³                               |
| 0.07 mg/m³                               |
| 0.03 mg/m³ FIV (Fração inalável e vapor) |
| 0.1 mg/m³                                |
| 0.03 mg/m³                               |
| 0.1 mg/m³ (TSH)                          |
| 0.3 mg/m³                                |
| 0.03 mg/m³ (IFV - Inhalable fraction and |
| vapor)                                   |
| 0.03 mg/m³                               |
| 0.3 mg/m³                                |
| 0.1 mg/m³ (BOEL)                         |
|  |

#### Appropriate engineering controls

Control exposures to below the OEL(s). 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. 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. Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Hand protection

Wear chemical-resistant, impervious gloves if skin contact is possible. Double gloves should be considered.

#### 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 this product/mixture, especially before eating, drinking or smoking. Protective equipment is not to be worn outside the work area (e.g., in common areas or outof-doors). Decontaminate all protective equipment following use.

## **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** 

**Formula** Mixture (Not Applicable) Molecular mass Mixture (Not Applicable)

Color Colorless. Odor Odorless. **Odor threshold** No data available No data available Hq **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 No data available Relative vapor density at 20 °C

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**

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  | Туре                      | Dose              |  |
|------------|---------------------------|-------------------|--|
| Acrylamide | LD50 Oral rat             | 175 mg/kg         |  |
|            | LD50 Dermal rat           | 400 mg/kg         |  |
|            | LD50 Dermal rat           | 400 mg/kg         |  |
|            | LD50 Dermal rabbit        | 1150 mg/kg        |  |
|            | LC50 Inhalation rat [ppm] | > 5.7 ppm (6 hrs) |  |

**Additional information** No data available

Serious eye damage/irritation Acrylamide is irritating to eyes. Skin corrosion/irritation Acrylamide is irritating to skin Acrylamide is a skin sensitizer. Sensitization

STOT-single exposure No data available

STOT-repeated exposure In male and female rats administered 20 mg/kg/day acrylamide in drinking water over 90 days, animals were observed dragging their rear limbs, and showed decreases in the following parameters: body weights, serum cholinesterase activity, packed cell volume, red blood cells and hemoglobin values. Slight spinal cord degeneration, atrophy of skeletal

muscle, testicular atrophy, and distended urinary bladder were observed.

Reproductive toxicity Rats treated with acrylamide at doses of 10 mg/kg/day throughout pregnancy had impaired

kidney function and renal histopathological abnormalities, as did their fetuses. Male offspring in this study had reduced testosterone concentrations and histopathological abnormalities in the testis when mature. Depressed plasma levels of testosterone and prolactin have been observed. Degeneration of seminiferous tubules and chromosome

aberrations in spermatocytes was also seen in acrylamide-treated male mice.

Absorption of acrylamide by the fetus has been demonstrated in animal (pig, dog, rabbit, and rat) studies. In pregnant rats given acrylamide 5 mg/kg/day on gestation days 1-20, fetal brain tissue showed neuronal degeneration and hemorrhage; however, no information was provided on the maternal toxicity of this dose level. In other rodent studies,

neurotoxicity and developmental toxicity were observed at maternally toxic dose levels, but

no increase in malformations occurred.

Genotoxicity Acrylamide was not mutagenic in Salmonella typhimurium with or without metabolic activation. Acrylamide induced chromosomal aberrations in the spermatocytes of male

mice and increased cell transformation frequency in Balb 3T3 cells with metabolic

activation.

Acrylamide was shown to be an initiator for skin tumors in mice. It increased the incidence Carcinogenicity

of lung tumors in mice-screening assays. A statistically-significant increase in the incidence of mesothelioma of the scrotal cavity was observed in rats after long-term (2-year) administration of acrylamide in the drinking-water. Administration over 2 years of acrylamide not only increased the incidence of a variety of tumor types (both benign and

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**Developmental toxicity** 

malignant) but also decreased the life expectancy in both male and female rats. None of the other components of this product/mixture present at levels greater than or equal to

0.1% are listed by NTP, IARC, ACGIH or OSHA as a carcinogen.

Aspiration hazard

No data available

**Experience with humans** 

See "Section 2 - Other Hazards".

| Acrylamide (79-06-1)              |  |
|-----------------------------------|--|
| IARC group                        | 2A - Probably carcinogenic to humans   |
| National Toxicology Program (NTP) | Reasonably anticipated to be Human Carcinogen                                      |
| US-EPA                            | Group B2 Likely to be carcinogenic to humans - Group B2.Probable human carcinogen. |
| ACGIH                             | A3; Confirmed animal carcinogen with unknown relevance to humans.                  |

## **SECTION 12: Ecological information**

| Toxicity |
|----------|
| Compon   |

| Component                     | Туре   | Concentration |
|-------------------------------|--|---------------|
| Acrylamide                    | LC50 – Carrasius Auratus (Goldfish)  | 160 mg/l 96 h |
|                               | LC50 – <i>Pimephales Promelas</i> (Fathead minnow)   | 109 mg/l 96 h |
|                               | EC50 – Daphnia Magna (Water flea)  | 98 mg/l 48 h  |
|                               | EC50 – <i>Lepomis Macrochirus</i><br>(Bluegill sunfish)  | 85 mg/l 96 h  |
| 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**

## 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.

## **SECTION 14: Transport information**

Transport

Based on the available data, this mixture is regulated as a hazardous material/dangerous good

under EU ADR/RID, US DOT, Canada TDG, IATA, or IMDG.

UN number

UN3426

**UN** proper shipping name

Acrylamide solution

Transport hazard class(es) (DOT)

6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132

Packing group

III - Minor Danger

Marine pollutant

Based on the available data, this 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**

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

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund

Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

California Proposition 65

This product can expose you to acrylamide, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to

www.P65Warnings.ca.gov.

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**

#### Full text of H phrases and GHS classification

Acute Tox. 3 (Dermal) - Acute toxicity (dermal) Category 3.

Acute Tox. 3 (Oral) - Acute toxicity (oral) Category 3.

Acute Tox. 4 (Inhalation) - Acute toxicity (inhalation) Category 4.

Carc. 1B - Carcinogenicity Category 1B.

Eye Irrit. 2 - Serious eye damage/eye irritation Category 2.

Muta. 1B - Germ cell mutagenicity Category 1B.

Repr. 2 - Reproductive toxicity Category 2.

Skin Irrit. 2 - Skin corrosion/irritation Category 2.

Skin Sens. 1 - Skin sensitization, Category 1.

STOT RE 1 - Specific target organ toxicity (repeated exposure) Category 1.

H301 - Toxic if swallowed.

H311 - Toxic in contact with skin.

H315 - Causes skin irritation.

H317 - May cause an allergic skin reaction.

H319 - Causes serious eye irritation.

H332 - Harmful if inhaled.

H340 - May cause genetic defects.

H350 - May cause cancer.

H361f - Suspected of damaging fertility.

H372 - Causes damage to organs (liver, kidneys, peripheral and central nervous systems) through prolonged or repeated exposure.

Information from published literature and internal company data.

#### **Data sources**

#### Abbreviations and acronyms

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; 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

Issue date

Current revision

Indication of changes

D

November 2022

This is the second version of this SDS.

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#### Disclaimer

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.