

Safety Data Sheet
acc. to OSHA HCS

Printing date 10/29/2021

Reviewed on 10/29/2021

1 Identification of the substance/mixture and of the company/undertaking**Product identifier****Trade name:** FuGENE® 4K Transfection Reagent**Application of the substance / the preparation** Laboratory chemicals**Details of the supplier of the safety data sheet****Manufacturer/Supplier:**Fugent LLC
1600 Aspen Commons, 101
Madison, WI 53562
U.S.A. 1-608-215-4449**Information department:** contact@fugene.com**Emergency telephone number:**For Chemical Emergency ONLY (spill, leak, fire, exposure or accident), call CHEMTREC at 1-800-424-9300
Outside US/Canada: +1 703-527-3887**2 Composition/information on ingredients****Chemical characterization: Mixtures****Description:** Mixture of the substances listed below with nonhazardous additions.**Dangerous components:**

64-17-5	ethanol	75-100%
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Additional information: For the wording of the listed risk phrases refer to section 15.**3 Hazards identification****Classification of the substance or mixture****Classification according to Directive 67/548/EEC or Directive 1999/45/EC**

Highly flammable

Highly flammable.

Classification system:

The classification was made according to the latest editions of international substances lists, and is expanded upon by company and technical literature data.

Label elements**Labelling according to EU guidelines:**

The product has been classified and marked in accordance with directives on hazardous materials.

Code letter and hazard designation of product:

F Highly flammable

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Risk phrases:*Highly flammable. Irritating material***Safety phrases:***Keep container tightly closed and in a well-ventilated place.**Keep away from sources of ignition - No smoking.**Take precautionary measures against static discharges.**In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.**This material and its container must be disposed of as hazardous waste.***Classification system:****NFPA ratings (scale 0 - 4)***Health = 1**Fire = 3**Reactivity = 0***HMIS-ratings (scale 0 - 4)***Health = 1**Fire = 3**Reactivity = 0***OSHA Hazard Overview (Criteria according to 29CFR1910.1200):***Flammable***Primary route(s) of entry:***Inhalation**Oral***Target Organ(s):***May cause Liver damage (Hepatotoxin)**May affect Nervous system (Neurotoxin)***Other hazards** *Keep away from sources of ignition.*

* 4 First aid measures

*After inhalation: Supply fresh air; consult doctor in case of complaints.**After skin contact: Irritating to skin. Remove affected person from source of contamination.**After eye contact: Rinse opened eye for several minutes under running water.**After swallowing: If symptoms persist consult doctor.*

* 5 Firefighting measures

Suitable extinguishing agents:*CO₂, sand, extinguishing powder. Do not use water.**Use fire fighting measures that suit the environment.***For safety reasons unsuitable extinguishing agents:***Water**Water with full jet***Special hazards arising from the substance or mixture** *None known*

* 6 Accidental release measures

Personal precautions, protective equipment and emergency procedures*Wear protective equipment. Keep unprotected persons away.**Keep away from ignition sources**Wear protective clothing.*

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Environmental precautions:

Prevent seepage into sewage system, workpits and cellars.

Do not allow to enter sewers/ surface or ground water.

Methods and material for containment and cleaning up:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Ensure adequate ventilation.

Do not flush with water or aqueous cleansing agents

Reference to other sections

See Section 7 for information on safe handling.

See Section 13 for disposal information.

7 Handling and storage

Handling:**Precautions for safe handling** Use only in well ventilated areas.**Information about protection against explosions and fires:**

Keep ignition sources away - Do not smoke.

Protect against electrostatic charges.

Storage:**Requirements to be met by storerooms and receptacles:** Store in a cool location.**Information about storage in one common storage facility:** Not required.**Further information about storage conditions:**

Keep receptacle tightly sealed.

Store in cool, dry conditions in well sealed receptacles.

Specific end use(s) No further relevant information available.

8 Exposure controls/personal protection

Components with limit values that require monitoring at the workplace:**64-17-5 ethanol**PEL 1900 mg/m³, 1000 ppmREL 1900 mg/m³, 1000 ppmTLV Short-term value: 1880 mg/m³, 1000 ppm**Additional information:** The lists that were valid during the creation were used as basis.**Personal protective equipment:****General protective and hygienic measures:** Wash hands before breaks and at the end of work.**Breathing equipment:** Not required.**Protection of hands:**

Protective gloves

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

Material of gloves

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

Eye protection: Tightly sealed goggles

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9 Physical and chemical properties

General Information

Appearance:

Form:	Fluid
Color:	Colorless
Odor:	Characteristic
Odour threshold:	Not determined.

pH-value: Not determined.

Change in condition

Melting point/Melting range:	Undetermined.
Boiling point/Boiling range:	78°C (172 °F)

Flash point: ≤ 21°C (≤ 70 °F)

Flammability (solid, gaseous): Not applicable.

Ignition temperature: 425°C (797 °F)

Decomposition temperature: Not determined.

Auto igniting: Product is not selfigniting.

Danger of explosion: Product does not present an explosion hazard.
Product is not explosive. However, formation of explosive air/vapor mixtures are possible.

Explosion limits:

Lower:	3.5 Vol %
Upper:	15.0 Vol %

Vapor pressure at 20°C (68 °F): 59 hPa (44 mm Hg)

Density: Not determined.

Relative density Not determined.

Vapour density Not determined.

Evaporation rate Not determined.

Solubility in / Miscibility with

Water: Not miscible or difficult to mix.

Segregation coefficient (n-octanol/water): Not determined.

Viscosity:

Dynamic: Not determined.

Kinematic: Not determined.

Solvent content:

Organic solvents: 80.0 %

VOC content: 80.0 %

Other information No further relevant information available.

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: No decomposition if used according to specifications.

Incompatible materials: No further relevant information available.

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Hazardous decomposition products: No dangerous decomposition products known.

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification: No data available

Primary irritant effect:

on the skin: Skin Irritant.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

12 Ecological information

Aquatic toxicity: Not harmful to the aquatic environment

Persistence and degradability: Not available

Behavior in environmental systems:

Bioaccumulative potential: Not known

Ecotoxicological effects:

Remark: Not available

Additional ecological information:

General notes:

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

Waste treatment methods

Recommendation:

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: Handling and Storage and Section 8: Exposure Control/Personal Protection for additional handling information and protection of employees.

Uncleaned packagings:

Recommendation: Disposal must be made according to official regulations.

14 Transport information

DOT regulations:



Hazard class: 3

Identification number: UN1170

Packing group: II

Proper shipping name (technical name): ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

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Label 3**Land transport ADR/RID (cross-border):**

ADR/RID class: 3 (F1) Flammable liquids
Danger code (Kemler): 33
UN-Number: 1170
Packaging group: II
Label: 3
UN proper shipping name: 1170 ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

Maritime transport IMDG:

IMDG Class: 3
UN Number: 1170
Label 3
Packaging group: II
EMS Number: F-E,S-D
Marine pollutant: No
Propper shipping name: ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

Air transport ICAO-TI and IATA-DGR:

ICAO/IATA Class: 3
UNID Number: 1170
Label 3
Packaging group: II
Propper shipping name: ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)

15 Regulatory information

Misha Gurevich

Section 355 (extremely hazardous substances):

None of the ingredients are listed.

Section 313 (Specific toxic chemical listings):

None of the ingredients are listed.

TSCA (Toxic Substances Control Act):

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Proposition 65**Chemicals known to cause cancer:**

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for females:

None of the ingredients are listed.

Chemicals known to cause reproductive toxicity for males:

None of the ingredients are listed.

Chemicals known to cause developmental toxicity:

64-17-5 ethanol

Carcinogenicity categories**EPA (Environmental Protection Agency)**

None of the ingredients are listed.

IARC (International Agency for Research on Cancer)

None of the ingredients are listed.

NTP (National Toxicology Program)

None of the ingredients are listed.

TLV (Threshold Limit Value established by ACGIH)

64-17-5 ethanol

A3

MAK (German Maximum Workplace Concentration)

64-17-5 ethanol

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NIOSH-Ca (National Institute for Occupational Safety and Health)

None of the ingredients are listed.

OSHA-Ca (Occupational Safety & Health Administration)

None of the ingredients are listed.

Product related hazard informations:

The product has been classified and marked in accordance with directives on hazardous materials.

Hazard symbols:

F Highly flammable

Risk phrases:

Highly flammable. Irritating material

Safety phrases:

Keep container tightly closed and in a well-ventilated place.

Keep away from sources of ignition - No smoking.

Take precautionary measures against static discharges.

In case of fire, use sand, carbon dioxide or powdered extinguishing agent. Never use water.

This material and its container must be disposed of as hazardous waste.

National regulations:

Class	Share in %
NK	80.0

Water hazard class: Water hazard class 1 (Self-assessment): slightly hazardous for water.

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16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

Department issuing MSDS:

Fugent LLC

1600 Aspen Commons, 101

Middleton, WI 53562

Ph: (608)215-4449

*** Data compared to the previous version altered.**

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