

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

- Product identifiers**

Product Name: ExoLISA™ Kit
 Catalogue Number: EX501, EX502, EX503

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

Research use only. Not for human use.

- Details of the supplier of the safety data sheet**

Company Cell Guidance Systems
 Maia Building, Babraham Research Campus,
 Cambridge CB22 3AT, UK

Web www.cellgs.com
 Email tech@cellgs.com
 Telephone +44 (0)1223 967316

- Emergency Information**

In case of a chemical emergency, spill, fire, or exposure, call Cell Guidance Systems at +44 (0) 1223 967316 (09.00 - 17.00 GMT). In US call 760 450 4304.

2. HAZARDS IDENTIFICATION

- Classification of the substance or mixture**

Not a hazardous substance or mixture.
 This substance does not meet the classification criteria of the EC Directives 67/548/EEC, 1999/45/EC or 1272/2008.

- Label elements**

The product does not need to be labeled in accordance with EC directives or respective national laws.

- Other hazards**

None

3. COMPOSITION/INFORMATION ON INGREDIENTS

- Substances**

Hazardous components according to Regulation (EC) No 1272/2008 (CLP):

Assay Buffer:

Component	Classification	Percentage (weight)
Sodium azide CAS No 26628-22-8 Substance with an occupational exposure limit	Acute Tox. 2: H300 Acute Tox. 2: H330 Acute Tox. 1: H310 STOT RE 2: H373 Aquatic Acute 1: H400 Aquatic Chronic 1: H410	< 0.1 %

Wash Concentrate 25x:

Component	Classification	Percentage (weight)
Germall™ II CAS No 78491-02-8	Eye Irrit. 2: H319	< 2.5 %

Europium Fluorescence Intensifier (EFI Solution):

Component	Classification	Percentage (weight)
Acetic acid Substance with an occupational exposure limit CAS No 64-19-7	Flam. Liq. 3: H226 Skin Corr. 1A:H314	< 1 %
Triton X-100 Containing component [4-(1,1,3,3,-tetramethylbutyl)phenol, ethoxylated] which is included in the Authorisation List (REACH Regulation (EC) No 1907/2006 Annex XIV).		
CAS No 9002-93-1	Acute Tox. 4: H302 Skin Irrit. 2: H315 Eye Dam. 1:H318 Aquatic Acute 1: H400 Aquatic Chronic 1: H410	0.1-0.2%
Ethanol Substance with an occupational exposure limit CAS No 64-17-5	Flam. Liquid 2: H225 Eye Irrit. 2 H319	<0.1%

For full text of H-statements: see SECTION 16.

The product does not contain any more hazardous substances at concentrations of 1% or greater. The product is not known to contain carcinogens at a concentration of 0.1% or greater. No MSDS is required.

4. FIRST AID MEASURES

- Description of first aid measures**

General advice:	Consult a doctor and show this safety data sheet.
If inhaled:	Remove to fresh air and monitor breathing. If breathing becomes difficult, give oxygen. If breathing stops, give artificial respiration. Consult a doctor.
In case of skin contact:	Immediately wash skin with copious amounts of soap and water and rinse thoroughly. Remove contaminated clothing. Generally the product does not irritate the skin. Consult a doctor.
In case of eye contact:	Flush with copious amounts of water for several minutes. Consult a doctor.
If swallowed:	Rinse mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Consult a doctor.

5. FIRE-FIGHTING MEASURES

- Classification of substance**

Assay buffer and wash buffer are non-flammable. Europium fluorescence intensifier contains small volumes of flammable components.

- Suitable extinguishing media**

Use water spray, carbon dioxide, dry chemical powder or alcohol-resistant foam.

- Protective Equipment**

Wear suitable protective clothing to prevent contact with skin and eyes and self-contained breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

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

Use standard laboratory practices including proper personal protective equipment. Implement appropriate precautions to minimize direct contact with skin or eyes and prevent inhalation of dust.

- **Environmental precautions**

Do not let product enter drains.

- **Methods and materials for containment and cleaning up**

Cover spillage with suitable absorbent material. Using non-spark tools, sweep up material and place in an appropriate container. Ventilate area until after disposal is complete. Hold all material for appropriate disposal as described under section 13 of MSDS.

- **Additional information**

None

7. HANDLING AND STORAGE

- **Precautions for safe handling**

No special measures required. No special precautions are necessary if used correctly. Avoid inhalation, contact with eyes, skin and clothing.

- **Conditions for safe storage, including any incompatibilities**

Keep away from direct sunlight. Keep container tightly sealed until ready for use. Recommended storage temperature: Store at 4°C

- **Specific end uses**

None

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

- **Control parameters**

Components with workplace control parameters

Sodium azide CAS No 26628-22-8	Limit Value				National legislation or other provision which gives rise to the limit
	8 h		Short term (15 min)		
	ppm	mg/m ³	ppm	mg/m ³	
United Kingdom	Not available	0.1	Not available	0.3	EH40/2005 Workplace exposure limits

Acetic acid CAS No 64-19-7	Limit Value				National legislation or other provision which gives rise to the limit
	8 h		Short term (15 min)		
	ppm	mg/m ³	ppm	mg/m ³	
United Kingdom	10	25	20	50	EH40/2005 Workplace exposure limits

Ethanol CAS No 64-17-5	Limit Value				National legislation or other provision which gives rise to the limit
	8 h		Short term (15 min)		
	ppm	mg/m ³	ppm	mg/m ³	
United Kingdom	1000	1920	Not available	Not available	EH40/2005 Workplace exposure limits

- **Exposure controls**

Appropriate engineering controls

Ensure all engineering measures described under section 7 of MSDS are in place. Follow usual standard laboratory practices. Use appropriate personal protective work clothing.

- **Personal protective equipment**

Eye / face protection

Use appropriate safety glasses.

Skin protection

Use appropriate chemical resistant gloves. Gloves should be inspected before use.

Wash and dry hands thoroughly after handling.

Body protection

Wear appropriate protective clothing.

Respiratory protection

Respiratory equipment is not required.

9. PHYSICAL AND CHEMICAL PROPERTIES

- **Information on basic physical and chemical properties**

Assay Buffer

Appearance	Red liquid, translucent
Vapor pressure	23 hPa (at 20 °C) (calculated referring to water)
Vapor density	No data available
Odor	Odorless
Odor threshold	No data available
Relative density	1.01 g/ml (at 20 °C)
pH	7.6-7.9 (at 20 °C)
Solubility(ies)	Water-soluble
Melting / freezing point	0 °C
Partition coefficient	No data available
Boiling point / range	100 °C
Auto-ignition temperature	No data available
Flash point	No data available
Decomposition temperature	No data available
Evaporation rate	No data available
Viscosity	No data available
Flammability (solid, gas)	No data available
Explosive properties	No data available
Upper / lower flammability or explosive limits	No data available
Oxidising properties	No data available

Wash Buffer

Appearance	Colourless solution; clear
Vapor pressure	23 hPa (at 20 °C) (calculated referring to water)
Vapor density	No data available
Odor	Odorless
Odor threshold	No data available
Relative density	1.16 g/ml (at 20 °C)
pH	7.0-7.2 (at 20 °C)
Solubility(ies)	Water soluble
Melting / freezing point	0 °C
Partition coefficient	No data available
Boiling point / range	100 °C
Auto-ignition temperature	Not auto-ignitable
Flash point	No data available
Decomposition temperature	No data available
Evaporation rate	No data available
Viscosity	No data available

Flammability (solid, gas)	No data available
Explosive properties	No data available
Upper / lower flammability or explosive limits	No data available
Oxidising properties	No data available

EFI Solution

Appearance	Colourless, clear liquid
Vapor pressure	23 hPa (at 20 °C) (calculated referring to water)
Vapor density	No data available
Odor	Vinegary
Odor threshold	No data available
Relative density	0.997 g/ml (at 20°C)
pH	3-3.3 (at 20°C)
Solubility(ies)	Water soluble
Melting / freezing point	0°C
Partition coefficient	No data available
Boiling point / range	100°C
Auto-ignition temperature	No data available
Flash point	No data available
Decomposition temperature	No data available
Evaporation rate	No data available
Viscosity	No data available
Flammability (solid, gas)	No data available
Explosive properties	No data available
Upper / lower flammability or explosive limits	No data available
Oxidising properties	No data available

- **Other safety information**

No data available

10. STABILITY AND REACTIVITY

Assay Buffer

Reactivity

No data available.

Chemical stability

No data available.

Possibility of hazardous reactions

No data available.

Conditions to avoid

No data available.

Incompatible materials

No data available.

Hazardous decomposition products

In the event of fire see section 5.

Wash Buffer

Reactivity

No data available.

Chemical stability

No data available.

Possibility of hazardous reactions

No known hazardous reactions

Conditions to avoid

No data available.

Incompatible materials

No data available.

Hazardous decomposition products

No data available.

Streptavidin Coated Microtiter Plate

Reactivity

No data available.

Chemical stability

No data available.

Possibility of hazardous reactions

No data available.

Conditions to avoid

No data available.

Incompatible materials

Strong oxidising agents

Hazardous decomposition products

No data available. Other decomposition products.

11. TOXICOLOGICAL INFORMATION

- Information on toxicological effects

Assay Buffer

Acute Toxicity

For the mixture: based on available data, the classification criteria are not met.

Sodium azide:

Acute oral toxicity: LD50 rat: 27 mg/kg (RTECS).

Acute inhalation toxicity: LC50 rat: 0,054–0,52 mg/l, exposure time 4 h, test atmosphere dust/mist (US-EPA, ECHA).

Symptoms: Inhalation may lead to the formation of edemas in the respiratory tract.

Symptoms may be delayed.

Acute dermal toxicity: LD50 rabbit: 20 mg/kg (ECHA)

Skin corrosion/irritation

No data available

Serious eye damage/irritation	No data available
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	No data available
Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated exposure	No data available

Additional Information

For the mixture: based on available data, the classification criteria are not met.

Sodium azide:

Systemic effects: Dizziness, headache, nausea, vomiting, cough, shortness of breath, CNS disorders, convulsions, circulatory collapse, collapse, unconsciousness, tachycardia, drop in blood pressure. Other dangerous properties cannot be excluded. This substance should be handled with particular care.

Wash Buffer

Acute Toxicity

For the mixture: based on available data, the classification criteria are not met.

Germall™ II:

Oral: LD50 rat: > 2000 mg/kg. LD50 rabbit > 2000 mg/kg

Skin corrosion/irritation

For the mixture: based on available data, the classification criteria are not met.

Germall™ II:

No skin irritation. Remarks: May cause skin irritation in susceptible persons

Serious eye damage/irritation

For the mixture: based on available data, the classification criteria are not met.

Germall™ II:

Irritating to eyes. Remarks: Product dust may be irritating to eyes, skin and respiratory system. Causes serious eye irritation.

Respiratory or skin sensitization

For the mixture: based on available data, the classification criteria are not met.

Germall™ II:

Test Type: Maximisation Test. Species: Guinea pig. Assessment: Did not cause sensitisation on laboratory animals.

Germ cell mutagenicity

For the mixture: based on available data, the classification criteria are not met.

Germall™ II:

Test Type: Ames test: Metabolic activation: with and without metabolic activation.

Result: negative Test Type: Chromosome aberration test in vitro: Metabolic activation: with and without metabolic activation. Result: negative. Test Type: In vivo micronucleus test: Test species: Mouse (male and female). Application Route: Oral. Method: Mutagenicity (micronucleus test). Result: negative. Application Route: Oral. Method: OECD Test Guideline 486. Result: negative.

Carcinogenicity

No data available

Reproductive toxicity

For the mixture: based on available data, the classification criteria are not met.

Germall™ II:

Test Type: Embryo-fetal development: Species: Rat. Application Route: Oral.

Dose: 500 milligram per kilogram

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

For the mixture: based on available data, the classification criteria are not met.

Germall™ II:

Species: Rat, male and female. NOEL: 200 mg/kg. Application Route: Oral.

Exposure time: 90-day.

Additional Information

Not available

Streptavidin Coated Microtiter Plate

Acute Toxicity	No data available
Skin corrosion/irritation	No data available
Serious eye damage/irritation	No data available
Respiratory or skin sensitization	No data available
Germ cell mutagenicity	No data available

Carcinogenicity	No data available
Reproductive toxicity	No data available
Specific target organ toxicity - single exposure	No data available
Specific target organ toxicity - repeated exposure	No data available
Additional Information	Not available

EFI Solution

Acute Toxicity

For the mixture: based on available data, the classification criteria are not met.

Acetic acid:

Oral: LD50 rat: 3.310 mg/kg.

Inhalation: LC50 mouse/4h: 2.819 mg/L

Ethanol:

Dermal: LD50 rat: 10,470 mg/kg; LD50 rabbit: 15,800 mg/kg

Inhalation: LC50 rat/4h: 51-55 mg/L, LC50 mouse/1h: 30,000 mg/m³

Triton X-100:

Oral: LD50 rat: 1.9 – 5.0 mg/kg

Dermal: LD50 rabbit: 3.0 mg/kg

Skin corrosion/irritation

For the mixture: based on available data, the classification criteria are not met.

Acetic acid:

Skin: Rabbit – Result: Causes burns. – 4h.

Ethanol:

Prolonged or repeated contact may dry skin and cause irritation.

Triton X-100:

Skin: Rabbit – Result: irritating – 4h

Serious eye damage/irritation

For the mixture: based on available data, the classification criteria are not met.

Acetic acid:

Eyes – Rabbit: Result: Causes burns – 4 h. Causes serious eye damage.

Ethanol:

Causes serious eye irritation.

Triton X-100:

Eyes – Rabbit: Result: Risk of serious damage to eyes. (Draize Test) Risk of corneal clouding.

Respiratory or skin sensitization

For the mixture: based on available data, the classification criteria are not met.

Ethanol:

No sensitization responses were observed.

Triton X-100:

Sensitization test: Human: Result – negative.

Germ cell mutagenicity

For the mixture: based on available data, the classification criteria are not met.

Acetic acid:

Ames test: Salmonella typhimurium: Result: negative.

Mutagenicity (mammal cell test): chromosome aberration. Chinese hamster ovary cells: Result: negative.

Mutagenicity (micronucleus test): Rat – male and female – bone marrow: result: negative.

Ethanol:

Did not show carcinogenic or mutagenic effects in animal experiments.

Triton X-100:

Mutagenicity (mammal cell test) Mouse lymphoma test: Result: negative (Lit.).

Carcinogenicity

For the mixture: based on available data, the classification criteria are not met.

Acetic acid:

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

Ethanol:

Did not show carcinogenic or mutagenic effects in animal experiments.

Triton X-100:

Reproductive toxicity
Specific target organ toxicity - single exposure
Specific target organ toxicity - repeated exposure
Additional Information

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible, or confirmed human carcinogen by IARC.

For the mixture: based on available data, the classification criteria are not met.

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For the mixture: based on available data, the classification criteria are not met.

Acetic acid:

Material is extremely destructive to tissue of the mucus membranes and upper respiratory tract, eyes, and skin.

12. ECOLOGICAL INFORMATION

Assay Buffer

Ecotoxicity

For the mixture, no data available.

Sodium azide:

Toxicity to fish: LC50 (Lepomis macrochirus (Bluegill sunfish)): 0,7 mg/l; 96 h (ECOTOX Database). Toxicity to daphnia and other aquatic invertebrates: EC50 (Daphnia pulex (Water flea)): 4,2 mg/l; 48 h (ECOTOX Database). Toxicity to algae/aquatic plants: IC50 (mixed culture of green algae): 272 mg/l; (Lit.). Toxicity to micro-organisms: EC50 (Photobacterium phosphoreum: 38,5 mg/l; (Lit.).

Persistence and degradability

No data available

Bioaccumulative potential

For the mixture: No relevant information available.

Sodium azide:

Partition coefficient: n-octanol/water log Pow: 0.3 OECD Test Guideline 117. Bioaccumulation is not expected.

Mobility in soil

No data available

Results of PBT and vPvB assessment

Not available

Other adverse effects

For the mixture, no data available.

Sodium azide:

Biological effects: Forms toxic mixtures in water, dilution measures notwithstanding. Herbicide. Nematocidal effect. Discharge into the environment must be avoided.

Wash Buffer

Ecotoxicity

No data available

Persistence and degradability

For the mixture: No relevant information available.

Germall™ II:

Biodegradability: Biodegradation: 24 %. Exposure time: 28 d. Remarks: Not readily biodegradable. Stability in water: Degradation half life (DT50): 12 h (20,4 °C) pH: 7.

Bioaccumulative potential

For the mixture: No relevant information available.

Germall™ II:

Remarks: The substance has low potential for bioaccumulation.

Mobility in soil

For the mixture: No relevant information available.

Germall™ II: Adsorption/Soil: Medium: Soil: Koc: < 2

Results of PBT and vPvB assessment

Not available

Other adverse effects

For the mixture: No relevant information available.

Germall™ II: An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Toxic to aquatic life.

Streptavidin Coated Microtiter Plate

Ecotoxicity

No data available

Persistence and degradability

No data available

Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

Not available

Other adverse effects

No data available

EFI Solution

Ecotoxicity

The product contains a component that has endocrine disrupting properties in the environment. Discharge into the environment must be avoided.

Acetic acid: Toxicity to fish: semi-static test LC50 – *Oncorhynchus mykiss* (rainbow trout): 1000 mg/l – 96 h

Toxicity to daphnia and other aquatic invertebrates: Static test EC50 – *Daphnia magna* (Water flea): 1000 mg/l – 48 h

Toxicity to algae: static test EC50 – *Skeletonema costatum*: 1000 mg/l – 72 h

Toxicity to bacteria: EC5 – *Pseudomonas putida*: 2850 mg/l – 16 h Remarks: neutral (maximum permissible toxic concentration) (Lit.). Microtox test EC50 – *Photobacterium phosphoreum* – 11 mg/l – 15 min.

Triton-X-100: Toxicity to fish: LC50 *Pimephales promelas* (Fathead minnow): 4 – 8.0 mg/l - 96 h.

Semi-static test LC50: *Leuciscus idus* (Golden orfe): 0.26 mg/l - 96 h.

Toxicity to *Daphnia* and other aquatic invertebrates: LC50 *Daphnia magna* (water flea): 18-26 mg/l - 48 h. Static test EC50 -*Daphnia magna* (water flea) – 0.011 mg/l – 48 h.

Toxicity to algae: static test EC50 – *Pseudokirchneriella subcapitata* (Green algae) – 1.9 mg/l – 96 h.

Persistence and degradability

For the mixture: No relevant information available.

Acetic acid: Biodegradability: Result: 99%; 3 Readily biodegradable. Result:95% - Readily eliminated from water.

Ethanol:

Biochemical Oxygen Demand (BOD):880mg/g(Lit.) Ratio BOD/ThBOD 76%
Readily biodegradable, according to appropriate OECD test: Over 80%/4d (OECD TG 301). Photochemical degradability: 3.d (Average). Half value in air 36-40 h.
Triton X-100:
Chemical Oxygen Demand (COD) 2.19 mg/g.

Bioaccumulative potential

Bioaccumulation is not expected

Mobility in soil

No data available

Results of PBT and vPvB assessment

Not available

Other adverse effects

Acetic acid:

Biological effects: Harmful effect due to pH shift. Caustic even in diluted form.
Discharge into the environment must be avoided.

Triton X-100:

Very toxic to aquatic life with long lasting effects. Causes endocrine disruption.
Discharge into the environment must be avoided.

13. DISPOSAL CONSIDERATIONS

• Waste treatment methods

Product	Transfer to a suitable container and arrange for collection by specialized disposal company in accordance with national, regional, or local legislation.
Contaminated packaging	Dispose in accordance with national, regional, or local legislation.

14. TRANSPORT INFORMATION

• UN Number

Not regulated.

• DOT regulations

Hazard class: None

• Land transport ADR/RID (cross-border)

Not regulated.

• Maritime transport IMDG

Not regulated.

• Marine pollutant

No.

• Air transport ICAO-TI and IATA-DGR

Not regulated.

- **Transport/Additional information**

Not dangerous according to the above specifications.

- **Environmental hazards**

No.

- **Special precautions for users**

No data available.

15. REGULATORY INFORMATION

- **USA**

TSCA (Toxic Substances Control Act)

The product is not listed.

SARA 313

The product is not listed.

SARA 311/312 Hazards

None known.

CERCLA Reportable Quantity

The product is not reportable under 40 CFR Part 302.4.

California Proposition 65

The product is not listed on California's listing of known or potential carcinogens.

- **EU**

This MSDS was prepared in accordance with Regulation (EC) No.1272/2008 and European Directive 67/548/EEC as amended.

Authorizations and/or restrictions on use:

EF1 Solution: Contains component 4-(1,1,3,3,-tetramethylbutyl)phenol, ethoxylated which is included in the Authorisation List (REACH Regulation (EC) No 1907/2006 Annex XIV. Sunset date for this component was 04/01/2021. After the sunset date a substance cannot be used unless an authorization is granted. However, substances used in scientific research and development (SR&D) are exempt from authorization.

- **Canada**

Not WHMIS controlled. This MSDS was prepared in accordance with Hazardous Products Regulations (HPR) and WHMIS 2015.

16. OTHER INFORMATION

- **Relevant statements**

- H225 Highly flammable liquid and vapor.
- H226 Flammable liquid and vapor.
- H300 Fatal if swallowed.
- H302 Harmful if swallowed.
- H310 Fatal in contact with skin.
- H314 Causes severe skin burns and eye damage.
- H315 Causes skin irritation.
- H318 Causes serious eye damage.
- H319 Causes serious eye irritation.
- H330 Fatal if inhaled.
- H373 May cause damage to organs through prolonged or repeated exposure.

- H400 Very toxic to aquatic life.
- H410 Very toxic to aquatic life with long lasting effects.

- **Disclaimer**

THIS PRODUCT IS FOR RESEARCH USE ONLY. NOT INTENDED FOR HUMAN OR ANIMAL DIAGNOSTIC OR THERAPEUTIC USES.

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End of safety data sheet