

SAFETY DATA SHEET

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Section 1: Identification

1.1. Product Identifier:

Product Codes: BR00008

Product Name: Glucose-6-phosphatase (G6Pase) Activity Assay Kit

1.2. Relevant identified uses of the substance or mixture and uses advised against:

Identified use:

Laboratory reagent kit for in vitro quantitative determination of the stated analyte by enzyme-linked immunosorbent assay. Professional laboratory use only, by trained personnel.

Uses advised against: not for diagnostic or therapeutic procedures in humans or animals; not for food, cosmetic or household use; not for administration to humans or animals.

Pure substance/mixture: Mixture

1.3. Details of the supplier of the safety data sheet:

Assay Genie
25 Windsor Place
D02VY42
Dublin 2
Ireland
+353 (01) 8879802

For information about this SDS, please contact: techsupport@assaygenie.com

1.4. Emergency Telephone Number:

Contact the national poisons information centre or emergency service for the country of use.

Europe: A directory of centres is maintained by the European Association of Poisons Centres and Clinical Toxicologists (EAPCCT)

United Kingdom: general public dial 111 (England, Scotland and Wales); healthcare professionals contact the National Poisons Information Service (NPIS)

United States: Poison Help, 1-800-222-1222 (24 hours)

Canada: 1-844-POISON-X / 1-844-764-7669 (24 hours); Québec 1-800-463-5060

Australia: Poisons Information Centre, 13 11 26 (24 hours)

New Zealand: National Poisons Centre, 0800 764 766 (24 hours)

Elsewhere: consult the World Health Organization world directory of poisons centres

Section 2: Hazard(s) Identification

2.1. Classification of the substance or mixture

This product is a kit made up of separately packaged components. Classification according to Regulation (EC) No 1272/2008 (CLP) is given per component.

TCA Solution (10%): Skin Corr. 1A, H314; Eye Dam. 1, H318; STOT SE 3, H335; Aquatic Chronic 2, H411

G6Pase Assay Solution: Met. Corr. 1, H290

All other components (10x Lysis Buffer, 10x Extraction Buffer, G6Pase Control, G6Pase Reaction (lyophilised)): Not classified.

2.2. Label elements

TCA Solution (10%)

Hazard pictograms: GHS05 (corrosion), GHS07 (exclamation mark), GHS09 (environment)



Signal word: Danger

Hazardous component(s) for labelling: Trichloroacetic acid

Hazard statements:

H314 Causes severe skin burns and eye damage.

H335 May cause respiratory irritation.

H411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

P260 Do not breathe mist/vapours/spray.

P273 Avoid release to the environment.

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with 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.

P310 Immediately call a POISON CENTER/doctor.

G6Pase Assay Solution

Hazard pictograms: GHS05 (corrosion)

Signal word: Warning

Hazardous component(s) for labelling: Hydrochloric acid

Hazard statements:

H290 May be corrosive to metals.

Precautionary statements:

P234 Keep only in original packaging.

P390 Absorb spillage to prevent material damage.

Inner packagings of 125 ml or less may use the reduced labelling permitted under Annex I, section 1.5.2 of Regulation (EC) No 1272/2008.

2.3. Other hazards

This mixture contains no substance considered to be persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), and no substance with endocrine-disrupting properties, at levels of 0.1 % or higher.

Section 3: Composition/ Information on Ingredients

3.2. Mixtures

Ingredients present in the kit components (one row per chemical), with classification according to Regulation (EC) No 1272/2008 (classification of the pure substance unless stated). Concentration is not required for ingredients that are not classified (n/a):

Component / Ingredient	CAS No. / EC No.	Concentration (% w/w)	Classification (EC) No 1272/2008
TCA Solution (10%) Trichloroacetic acid	76-03-9 / 200-927-2	10	Skin Corr. 1A, H314; Eye Dam. 1, H318; STOT SE 3, H335 (SCL $\geq$ 1 %); Aquatic Acute 1, H400; Aquatic Chronic 1, H410
G6Pase Assay Solution Hydrochloric acid	7647-01-0 / 231-595-7	n/a	Met. Corr. 1, H290 (SCL $\geq$ 0.1 %); Skin Corr. 1B, H314 ($\geq$ 25 %); Skin Irrit. 2, H315 / Eye Irrit. 2, H319 (10–< 25 %); STOT SE 3, H335 ($\geq$ 10 %)
G6Pase Assay Solution Malachite green oxalate	2437-29-8 / 219-441-7	n/a	Acute Tox. 3, H301; Eye Dam. 1, H318; Repr. 2, H361fd; Aquatic Acute 1, H400 (M=1); Aquatic Chronic 1, H410 (M=1)
G6Pase Assay Solution Ammonium molybdate tetrahydrate	12054-85-2 / 234-722-4	n/a	Not classified
G6Pase reagents MES	4432-31-9 / 224-632-3	n/a	Not classified

Full text of H-statements in this section: H314 Causes severe skin burns and eye damage; H318 Causes serious eye damage; H335 May cause respiratory irritation; H400 Very toxic to aquatic life; H410 Very toxic to aquatic life with long lasting effects; H290 May be corrosive to metals; H315 Causes skin irritation; H319 Causes serious eye irritation; H301 Toxic if swallowed; H361fd Suspected of damaging fertility. Suspected of damaging the unborn child.

SCL = specific concentration limit; M = multiplying factor. Concentrations marked TBC have not been disclosed by the manufacturer and must be confirmed before release.

Section 4: First-Aid Measures

4.1. Description of first aid measures

General advice: Move out of the danger area. Show this safety data sheet to the doctor in attendance.

If inhaled: Remove person to fresh air and keep comfortable for breathing. If breathing is difficult or symptoms persist, call a doctor.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with plenty of water/shower for at least 15 minutes. Call a doctor immediately.

In case of eye contact: Rinse immediately and cautiously with plenty of water for at least 15 minutes, holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing. Call an ophthalmologist immediately.

If swallowed: Rinse mouth. Make the victim drink water (two glasses at most). Do NOT induce vomiting (risk of perforation). Call a doctor immediately.

4.2. Most important symptoms and effects, both acute and delayed

TCA-containing component: causes severe burns to skin, eyes and mucous membranes; risk of serious eye damage and blindness; irritation of the respiratory tract. Ingestion may cause burns of the mouth, oesophagus and stomach.

G6Pase Assay Solution: acidic solution; may cause irritation on contact with skin, eyes and mucous membranes.

4.3. Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Immediate medical attention is required after eye contact, skin contact or ingestion of the corrosive / eye-damaging components.

Section 5: Fire-Fighting Measures

5.1. Extinguishing media

Suitable extinguishing media: Water spray, carbon dioxide (CO₂), dry chemical powder or alcohol-resistant foam. Use extinguishing measures appropriate to the surrounding fire.

Unsuitable extinguishing media: No limitations are known for this kit.

5.2. Special hazards arising from the substance or mixture

The kit components are predominantly aqueous solutions and are not flammable. In a fire, hazardous decomposition products may be formed, including carbon oxides, nitrogen oxides (NO_x), sulfur oxides, hydrogen chloride gas, phosgene.

Contact of the acidic component with metals may release hydrogen gas.

5.3. Advice for firefighters

Wear self-contained breathing apparatus and full protective clothing. Prevent fire-fighting water from entering drains or water courses (the kit contains components that are hazardous to the aquatic environment).

Section 6: Accidental Release Measures

6.1. Personal precautions, protective equipment and emergency procedures

Wear the personal protective equipment described in Section 8. Avoid contact with skin and eyes and avoid breathing vapours or mist. Ensure adequate ventilation. Keep unprotected persons away.

6.2. Environmental precautions

Do not allow the product to enter drains, surface water or groundwater. Given the small volumes supplied, a spill is unlikely to present a significant environmental risk if cleaned up promptly.

6.3. Methods and material for containment and cleaning up

Absorb spills with an inert, liquid-binding material (e.g. sand, diatomaceous earth, universal binder) and place in a suitable, labelled container for disposal according to Section 13. Acidic spills (TCA / HCl components) may be neutralised with sodium hydrogen carbonate before absorption. Clean the affected area thoroughly with water.

6.4. Reference to other sections

For personal protection see Section 8. For disposal see Section 13.

Section 7: Handling and Storage

7.1. Precautions for safe handling

For professional laboratory use only, by trained personnel. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke in the work area. Wash hands after handling. Follow good laboratory practice.

Handle the acidic / corrosive component(s) with particular care; open and dispense in a well-ventilated area and avoid generating aerosols.

7.2. Conditions for safe storage, including any incompatibilities

Keep containers tightly closed in a dry, well-ventilated place. Store each component as follows:

G6Pase Assay Solution (30 ml (150 wells)): 4 °C – Contains HCl; swirl before use

10x Lysis Buffer (25 ml): 4 °C – Dilute 1:10

10x Extraction Buffer (20 ml): 4 °C – Dilute 1:10

G6Pase Control (1 ml): 4 °C (PDF) / -20 °C (web) – Used to reconstitute Reaction

G6Pase Reaction (lyophilised) (0.4 ml after reconstitution): -20 °C after reconstitution – Reconstitute with 0.4 ml Control

TCA Solution (10%) (4 ml): 4 °C – Corrosive

Avoid repeated freeze–thaw cycles. Store away from strong oxidising agents, strong bases and metals.

7.3. Specific end use(s)

Laboratory reagent kit for research use. Not for diagnostic or therapeutic procedures.

Section 8: Exposure Controls/Personal Protection

8.1. Control parameters

Trichloroacetic acid (76-03-9): OELV-8 h (TWA) 0.5 ppm – Ireland, Code of Practice for the Chemical Agents Regulations.

Hydrochloric acid (7647-01-0): TWA 5 ppm / 8 mg/m³; STEL 10 ppm / 15 mg/m³ – Directive 2000/39/EC (indicative) and Ireland OELV.

Owing to the small volumes and low concentrations supplied, exposure above these limits is not expected under normal laboratory use.

8.2. Exposure controls

Appropriate engineering controls: Use in a well-ventilated laboratory. A fume hood is not normally required for the volumes supplied; use one if aerosols or vapours may be generated.

Eye/face protection: Tightly fitting safety goggles (EN 166). Use a face shield in addition when handling the corrosive component.

Hand protection: Nitrile rubber gloves tested to EN ISO 374 (minimum thickness 0.11 mm). Inspect gloves before use and replace if contaminated.

Body protection: Laboratory coat.

Respiratory protection: Not required under normal conditions of use with adequate ventilation.

Environmental exposure controls: Do not let the product enter drains.

Section 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical state: Liquid (aqueous solutions); G6Pase Reaction is supplied as a lyophilised solid

Colour: Component dependent; not determined

Odour: Not determined

Melting point/freezing point: Approx. 0 °C (aqueous solutions)

Boiling point or initial boiling point and boiling range: Approx. 100 °C (aqueous solutions)

Flammability: Not flammable

Lower and upper explosion limit: Not applicable

Flash point: Not applicable (aqueous solutions)

Auto-ignition temperature: Not applicable

Decomposition temperature: Not determined

pH: TCA component: strongly acidic (approx. pH 1); G6Pase Assay Solution: acidic; other components: buffered, not determined

Kinematic viscosity: Not determined

Solubility: Miscible with water

Partition coefficient n-octanol/water: Not applicable (mixture)

Vapour pressure: Not determined

Density and/or relative density: Approx. 1 g/cm³

Relative vapour density: Not determined

Particle characteristics: Not applicable (except lyophilised G6Pase Reaction)

9.2. Other information

Explosive properties: none. Oxidising properties: none. No further relevant data available.

Section 10: Stability and Reactivity

10.1. Reactivity

No hazardous reactions are known under normal conditions of use. The acidic components react with bases.

10.2. Chemical stability

Stable under the recommended storage conditions (see Section 7).

10.3. Possibility of hazardous reactions

Exothermic reaction with strong bases (acidic components).
Contact with metals may release hydrogen gas.

10.4. Conditions to avoid

Excessive heat, direct light (light-sensitive assay solutions) and repeated freeze–thaw cycles.

10.5. Incompatible materials

Strong oxidising agents, strong bases, metals.

10.6. Hazardous decomposition products

Under fire conditions: carbon oxides, nitrogen oxides, sulfur oxides, hydrogen chloride, phosgene. TCA may decompose to chloroform and carbon dioxide on heating.

Section 11: Toxicological Information

11.1. Information on hazard classes as defined in Regulation (EC) No 1272/2008

No toxicological studies have been performed on the kit or its components. The assessment is based on the ingredients and calculation methods of Regulation (EC) No 1272/2008.

Acute toxicity: Based on available data, the classification criteria are not met.

Skin corrosion/irritation: TCA Solution (10%): causes severe skin burns (Skin Corr. 1A). Other components: Based on available data, the classification criteria are not met.

Serious eye damage/irritation: TCA component: causes serious eye damage (Eye Dam. 1). Other components: Based on available data, the classification criteria are not met.

Respiratory or skin sensitisation: Based on available data, the classification criteria are not met.

Germ cell mutagenicity: Based on available data, the classification criteria are not met.

Carcinogenicity: Based on available data, the classification criteria are not met. No component is listed as a carcinogen at $\geq 0.1\%$.

Reproductive toxicity: Based on available data, the classification criteria are not met. Malachite green oxalate (Repr. 2) is present below the 3 % generic concentration limit.

STOT – single exposure: TCA component: may cause respiratory irritation (STOT SE 3). Other components: Based on available data, the classification criteria are not met.

STOT – repeated exposure: Based on available data, the classification criteria are not met.

Aspiration hazard: Based on available data, the classification criteria are not met.

11.2. Information on other hazards

Endocrine disrupting properties: The mixture does not contain components considered to have endocrine-disrupting properties for human health at levels of 0.1 % or higher.

Other information: Handle in accordance with good industrial hygiene and safety practice.

Section 12: Ecological Information

12.1. Toxicity

Trichloroacetic acid is very toxic to aquatic life with long lasting effects (Aquatic Acute 1 / Chronic 1; PNEC freshwater 0.00017 mg/l). The TCA component is classified as Aquatic Chronic 2. Malachite green is very toxic to aquatic life; at the concentration present the G6Pase Assay Solution does not meet the criteria for environmental classification.

12.2. Persistence and degradability

No data available for the mixture.

12.3. Bioaccumulative potential

No data available for the mixture. Significant bioaccumulation is not expected.

12.4. Mobility in soil

No data available. Components are water-soluble and may be mobile in soil.

12.5. Results of PBT and vPvB assessment

The mixture does not contain substances assessed as PBT or vPvB at levels of 0.1 % or higher.

12.6. Endocrine disrupting properties

The mixture does not contain components considered to have endocrine-disrupting properties at levels of 0.1 % or higher.

12.7. Other adverse effects

No further information available. Avoid release to the environment.

Section 13: Disposal Considerations

13.1. Waste treatment methods

Dispose of unused product, residues and contaminated packaging in accordance with Directive 2008/98/EC and local/national regulations, using a licensed waste disposal contractor. Do not discharge to drains. Collect hazardous components separately. Suggested European Waste Catalogue (EWC) code: 16 05 06* – laboratory chemicals consisting of or containing hazardous substances.

Samples and reagents that have been in contact with biological material should be treated as potentially infectious waste.

Contaminated packaging: empty containers should be rinsed before recycling or disposal.

Section 14: Transport Information

14.1. UN number or ID number: UN 3316

14.2. UN proper shipping name: CHEMICAL KIT

14.3. Transport hazard class(es): ADR/RID: 9; IMDG: 9; IATA: 9

14.4. Packing group: II (determined by the most stringent component: trichloroacetic acid solution, UN 2564, Class 8, PG II)

14.5. Environmental hazards: Not marked as environmentally hazardous in the quantities supplied (≤ 5 L per inner packaging: ADR/RID SP 375, IMDG 2.10.2.7, IATA SP A197).

14.6. Special precautions for user: The kit may be shipped as Excepted Quantities (ADR/IMDG Chapter 3.5, IATA DGR 2.6; Special Provision 340) provided each inner packaging does not exceed the excepted-quantity limit of the individual dangerous substance (TCA solution: E2, 30 ml; HCl solution (UN 1789, PG III): E1).

14.7. Maritime transport in bulk according to IMO instruments: Not applicable.

Ship components requiring -20 °C / -80 °C storage on dry ice or as appropriate; dry ice (UN 1845) is subject to its own transport requirements.

Section 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture

Regulation (EC) No 1907/2006 (REACH), as amended by Commission Regulation (EU) 2020/878; Regulation (EC) No 1272/2008 (CLP); Directive 98/24/EC (chemical agents at work); Directive 2008/98/EC (waste).

REACH Candidate List (SVHC, Article 59): Not applicable.

REACH Annex XIV (authorisation): Not applicable.

REACH Annex XVII (restrictions): Entry 3 (trichloroacetic acid, hydrochloric acid) – not relevant to the intended laboratory use.

Seveso III (Directive 2012/18/EU): Hazard category E1/E2 (environment) may apply to the components; quantities supplied are far below qualifying thresholds.

Regulation (EU) 2019/1021 (persistent organic pollutants): Not applicable.

Regulation (EU) 2024/590 (ozone-depleting substances): Not applicable.

Take note of Directive 94/33/EC on the protection of young people at work.

15.2. Chemical safety assessment

A chemical safety assessment has not been carried out for this mixture.

Section 16: Other Information

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This company shall not be held liable for any damage resulting from handling or from contact with the above product. This material must only be handled by suitably qualified, experienced scientists in appropriately equipped and authorized facilities. The above information is believed to be correct but does not purport to be all-inclusive and should be used as a guide only for experienced personnel. Always consult your safety advisor and follow appropriate local and national safety legislation. The absence of a warning must not, under any circumstances, be taken to mean that no hazard exists.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

****End Of MSDS****