

SAFETY DATA SHEET (SDS)

Compliant with GHS-Rev.7, GB/T 16483-2008, GB/T 17519-2013

Product: QG AQC-Tag Amino Acid Analysis Kit

Part Number: **T80421**

Kit Size: Sufficient for 50 amino acid analyses Document

Version: V1.0

Revision Date: 2026-06-09

Important Statement: **FOR RESEARCH LABORATORY USE ONLY. NOT FOR CLINICAL DIAGNOSTIC, DIAGNOSIS OR HUMAN IN-VIVO APPLICATION.**

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

- Product Name: QG AQC-Tag Amino Acid Analysis Kit
- Part Number (SKU): T80421
- Kit Components: Labeling Buffer, Reagent Powder (AQC-Tag derivatization powder), Reagent Diluent, Amino Acid Hydrolysis Standard Sample
- Storage condition for full kit: **2-8 °C, protected from light**

1.2 Identified uses and uses advised against

- Identified use: Laboratory research reagent. Pre-column derivatization for hydrolyzed amino acids from protein/peptide samples for HPLC-UV / HPLC-Fluorescence quantitative analysis.
- Uses advised against: Clinical diagnostic testing, human or animal therapeutic use, food-drug manufacturing, household use.

1.3 Supplier information

Manufacturer / Supplier: Suzhou Tanshi Biotechnology Co., Ltd]

Address: 2nd Floor, Building 1, Xingyao Port, No.101 Zhaoxi Road, Shaxi Town, Taicang City, Suzhou City, Jiangsu Province

Telephone: 180-2103-3979

Email: info@shtsbio.com

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Website: <http://www.shtsbio.com>

Email: info@shtsbio.com

1.4 Emergency telephone

Chemical emergency hotline: 180-2103-3979

Section 2: Hazards identification

2.1 Mixture hazard classification (GHS)

This kit includes **acetonitrile-containing Reagent Diluent**, formate-based aqueous buffer, solid AQC-tag derivatization compound, amino acid aqueous standard. Hazard classification is derived from kit raw-material properties:

- Flammable Liquid Category 3 (acetonitrile-containing Reagent Diluent)
- Acute Oral Toxicity Category 4
- Acute Inhalation Toxicity Category 4
- Skin Irritation Category 2
- Serious Eye Irritation Category 2
- Specific Target Organ Toxicity, Single exposure Category 3 (Central nervous system)
- Specific Target Organ Toxicity, Repeated exposure Category 2 (Liver, Kidney)

2.2 GHS label elements

Signal Word: **WARNING**



Hazard Statements H226 Flammable liquid and vapour. H302 Harmful if swallowed. H315 Causes skin irritation. H319 Causes serious eye irritation. H332 Harmful if inhaled. H335 May cause respiratory irritation. H373 May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements P210 Keep away from heat, hot surfaces, sparks, open flames. No smoking. P260 Do not breathe vapour / mist / spray. P264 Wash hands

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and exposed skin thoroughly after handling. P270 Do not eat, drink or smoke when using this product. P280 Wear protective nitrile gloves, chemical-resistant goggles, lab coat. P303+P361+P353 IF ON SKIN: Remove contaminated clothing immediately. Rinse skin with plenty of water. P304+P340 IF INHALED: Remove victim to fresh air and keep at rest in a comfortable breathing position. P305+P351+P338 IF IN EYES: Rinse cautiously with running water for several minutes. Remove contact lenses if easy to do. Continue rinsing. P312 Call a poison centre / physician if you feel unwell. P403+P235 Store in well-ventilated location. Keep cool; store kit at 2-8 °C protected from light. P501 Dispose of contents and container as hazardous laboratory waste according to local regulations.

2.3 Other hazards

No additional hazards identified. Kit contains low-mass solid derivatization powder; avoid generating powder aerosol.

Section 3: Composition / information on ingredients

This is a multi-component laboratory kit (multiple vials). Exact formulation is manufacturing confidential.

Substance	CAS-No.	Concentration range	GHS hazard remarks
Acetonitrile (in Reagent Diluent)	75-05-8	10-80 %	Flammable, toxic by inhalation / oral
Ammonium formate	540-69-2	5-15 %	Skin / eye irritant
Formic acid	64-18-6	< 1 %	Irritant
6-Aminoquinolyl-N-hydroxysuccinimidyl carbamate (AQC derivatization powder)	Custom proprietary	Solid trace amount	Irritant
Mixed hydrolysed amino acids standard mixture	Mixture	< 2.5 mM	Low hazard
Purified Water	7732-18-5	Balance	Non-hazardous

Note: Refer to individual vial labels inside kit for component-specific warnings.

Section 4: First-aid measures

4.1 Description of first-aid measures

- Inhalation:** Remove person to fresh air. If breathing difficulty occurs supply oxygen. Seek medical advice if headache, dizziness or nausea persists.

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- **Skin contact:** Immediately remove contaminated lab clothing. Rinse affected skin with large quantity of running water for ≥ 15 minutes. Seek medical help if irritation persists.
- **Eye contact:** Hold eyelids open; flush eyes continuously with plenty of running water for minimum 15 minutes. Remove contact lenses if applicable. Consult ophthalmologist if irritation continues.
- **Ingestion: Do NOT induce vomiting.** Rinse mouth with clean water. Never give oral substances to an unconscious person. Call poison-control centre or doctor immediately.

4.2 Key acute / delayed symptoms

Acute: Eye stinging, skin redness, headache, dizziness, nausea from solvent vapour inhalation. Delayed: Repeated long-term exposure may produce liver-kidney adverse effects from acetonitrile.

4.3 Notes to physician

Treat symptomatically. Inform medical personnel that patient has been exposed to acetonitrile-containing amino-acid derivatization laboratory kit reagents.

Section 5: Fire-fighting measures

5.1 Suitable / unsuitable extinguishing media

Suitable: Carbon dioxide (CO₂), dry chemical powder, alcohol-resistant foam.

Unsuitable: Direct high-pressure water jet (may spread flammable solvent vapour-liquid mixture).

5.2 Special hazards arising from mixture

Vapours are heavier than air and can travel to distant ignition sources and flash-back. Thermal decomposition may release carbon monoxide, nitrogen oxides, trace nitrile-containing fumes.

5.3 Advice for firefighters

Wear full chemical-resistant protective suit and self-contained breathing apparatus (SCBA). Prevent fire-run-off wastewater from entering drains or surface water. Cool closed reagent containers with water spray if exposed to fire heat.

Section 6: Accidental release measures

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6.1 Personal precautions

Evacuate non-relevant personnel. Eliminate all ignition sources (flame, spark, hot equipment). Ensure sufficient fume-hood ventilation. Avoid breathing vapour or powder aerosols. Wear nitrile gloves, chemical goggles, lab coat.

6.2 Environmental precautions

Prevent spilled liquid entering sewer, soil, river or surface water. Notify local environmental authority in case of large-volume spillage into public water systems.

6.3 Containment and clean-up methods

- **Small spill:** Absorb liquid spill with inert non-combustible absorbent material (vermiculite, inert sand). Collect waste into sealed labelled hazardous-waste container. Wipe contaminated surface.
- **Large spill:** Build dike to contain liquid; recover liquid where feasible. Do NOT discharge to sewer system. All spill waste must be treated as hazardous lab waste.

6.4 Reference

See Section 8 for personal protective equipment; Section 13 for waste handling.

Section 7: Handling and storage

7.1 Precautions for safe handling

- All reagent manipulation must be performed inside certified laboratory fume hood.
- Avoid skin, eye contact; avoid inhalation of solvent vapour and AQC-Tag powder aerosol.
- Keep far away from heat source, open flame and ignition sources. No smoking in working area.
- Do not mix kit reagents with strong oxidizing agents, strong acids or strong bases.
- Follow good laboratory practice: wash hands thoroughly after handling reagents. Remove contaminated work clothing before leaving lab area.

Operational reminder from manual: Reagent Diluent contains acetonitrile; strictly follow lab safety protocols during derivatization reagent preparation.

7.2 Safe storage conditions

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Whole kit official storage: 2-8 °C, protected from light, keep containers tightly closed.

- Store original kit packaging inside dedicated laboratory refrigerator.
- Isolate from oxidizers, food / feed materials. Restrict access for non-trained personnel. Prepared working AQC-Tag derivatization reagent (after reconstitution from kit powder):
 - Room-temperature (desiccator): stable for 7 days
 - Sealed at -20 °C: stable for 3 months

Note: Precipitation in Labeling Buffer vial is normal phenomenon; fully redissolve before experimental use.

7.3 Specific end-use

Research-only pre-column derivatization kit for hydrolyzed amino-acid HPLC analysis.

Section 8: Exposure controls / personal protection

8.1 Occupational exposure limit values

Substance	CAS-No.	8-h TWA occupational exposure limit
Acetonitrile	75-05-8	30 ppm
Formic acid	64-18-6	5 ppm

8.2 Exposure controls

Engineering controls: Perform all reagent handling inside fume hood; maintain general laboratory ventilation.

Personal protective equipment (PPE):

1. Eye-face protection: Chemical splash-proof safety goggles / face shield.
2. Skin protection: Solvent-resistant nitrile gloves, full-length laboratory coat.
3. Respiratory protection: Use organic-vapour cartridge respirator if fume-hood performance is insufficient.
4. Thermal hazards: None under recommended storage and room-temperature lab operation.

Hygiene measures: No eating, drinking or smoking inside reagent-handling workspace. Wash hands after finishing experimental work.

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Section 9: Physical and chemical properties

Properties described for complete kit; individual vials differ.

- Physical state: Kit containing multiple liquid vials plus solid derivatization powder.
- Odour: Characteristic faint nitrile-solvent odour from Reagent Diluent.
- pH (aqueous buffer components): pH 3-6
- Flash-point (acetonitrile-containing diluent): ~ 5.6 °C
- Boiling point (acetonitrile): 81-82 °C
- Kit storage condition: **2-8 °C, protected from light**
- Water miscibility: Most liquid components miscible with purified water
- Explosion limit for acetonitrile vapour: LEL 4.4 % vol; UEL 16 % vol

Section 10: Stability and reactivity

10.1 Reactivity

Reacts vigorously with strong oxidizing agents.

10.2 Chemical stability

Stable when stored under official recommended condition (original sealed kit at 2-8 °C, protected from light).

10.3 Hazardous reaction possibilities

Heating may cause accumulation of flammable solvent vapour. Contact with strong oxidizers may trigger fire risk.

10.4 Conditions to avoid

High temperature, open flame, direct strong sunlight, temperature > 30 °C, ignition sources, high-humidity long-term exposure for opened AQC-Tag powder (reagent powder is moisture-sensitive).

10.5 Incompatible materials

Strong oxidants, strong mineral bases, strong reducing agents.

10.6 Hazardous decomposition products

Thermal decomposition yields carbon monoxide, carbon dioxide, nitrogen oxides, trace nitrile-containing vapours.

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Section 11: Toxicological information

Toxicity information is derived from hazard data of individual raw-material components (acetonitrile, formate salts). Complete toxicology dataset for proprietary finished kit mixture is not available.

- Acute oral toxicity (acetonitrile): Rat LD₅₀ = 2460 mg/kg; harmful if swallowed.
- Acute inhalation: Harmful upon inhalation of solvent vapour.
- Skin irritation / eye irritation: Causes irritation on direct contact.
- STOT-single exposure: Inhalation may cause central nervous-system symptoms: headache, dizziness, nausea.
- STOT-repeated exposure: Repeated exposure may induce liver and kidney organ damage.
- Germ-cell mutagenicity / carcinogenicity: No classified carcinogenic ingredients in kit formulation.
- Reproductive toxicity: No test data available for this finished kit mixture.
- Aspiration hazard: Not classified.

Section 12: Ecological information

12.1 Ecotoxicity

Acetonitrile component is harmful to aquatic organisms. Do not discharge undiluted kit reagents to environmental water.

12.2 Persistence and degradability

Acetonitrile has moderate biodegradability in aqueous environment.

12.3 Bioaccumulative potential

Low bio-accumulation potential.

12.4 Mobility in soil

Solvent components exhibit high mobility within soil matrix.

12.5 PBT / vPvB assessment

PBT/vPvB assessment has not been performed for this proprietary laboratory-kit mixture.

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12.6 Other adverse effects

Avoid release to aquatic environment.

Section 13: Disposal considerations

13.1 Waste treatment methods

Expired kit, spent derivatization liquid, sample waste, residual reagents must be treated as **hazardous laboratory chemical waste**.

- **Never pour liquid waste down laboratory sink or sewer.**
- Collect all liquid and solid kit waste inside properly labelled hazardous-waste containers.
- Perform waste disposal complying with local, regional and national chemical waste regulatory requirements.
- Empty kit vials: Follow laboratory hazardous-container rinsing protocol. Do not reuse original kit vials for storing other chemicals.

Reminder: This product is for research-laboratory purpose only, not for clinical diagnostic application.

Section 14: Transport information

14.1 UN Number

UN 1993

14.2 UN Proper Shipping Name

FLAMMABLE LIQUID, N.O.S. (contains Acetonitrile)

14.3 Transport hazard class

Class 3 Flammable Liquids

14.4 Packing Group

PG III

14.5 Marine pollutant

Not classified as marine pollutant.

14.6 Special transport precautions

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- Maintain cold-chain requirement **2-8 °C** during transit; protect from sunlight and high ambient temperature.
- Keep away from ignition and heat sources during transportation.
- This product is small-size laboratory kit; bulk MARPOL / IBC-code transport is **not applicable**.

Section 15: Regulatory information

This Safety Data Sheet is compiled in accordance with UN-GHS Rev.7, Chinese national standard GB/T 16483-2008, GB/T 17519-2013. Regulatory note: This QG AQC-Tag Amino Acid Analysis Kit (T80421) is **research-grade biochemical reagent**. It is NOT classified as IVD in-vitro diagnostic medical reagent. Sales and handling are restricted for trained laboratory research-use only. Observe local chemical management legislation.

Section 16: Other information

- SDS Document Version: V1.0
- Corresponding product documents reference: 1. Certificate of Analysis (Lot Q20260601, Part-No. T80421) 2. Instruction Manual QG-AQC-Tag User Manual v1.0-260909
- Kit storage: 2-8 °C protected from light, 50-test kit.
- Derivatization reagent reconstitution protocol: see user manual Section 2.
- Chromatographic separation parameters refer to kit COA and instruction manual.

Disclaimer: Information given in this SDS reflects best available knowledge at revision date, intended only for laboratory safety handling guidance. It does not constitute any product-performance warranty. End-user bears responsibility for confirming suitability for own lab application and complying with all applicable local laws. This kit shall only be handled by trained laboratory personnel. **FOR RESEARCH USE ONLY. NOT FOR CLINICAL DIAGNOSIS.**

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