

# SAFETY DATA SHEET

Forensic Toxicology Comprehensive Mix – Submix 3, Part Number 5190-0559

## Section 1. Identification

**Product identifier** : Forensic Toxicology Comprehensive Mix – Submix 3, Part Number 5190-0559  
**Part No.** : 5190-0559

### Relevant identified uses of the substance or mixture and uses advised against

Analytical chemistry.  
 1 ml

**Supplier/Manufacturer** : Agilent Technologies Australia Pty Ltd  
 679 Springvale Road  
 Mulgrave  
 Victoria 3170, Australia  
 1800 802 402

**Emergency telephone number (with hours of operation)** : CHEMTREC®: (61)-290372994

## Section 2. Hazard(s) identification

### Classification of the substance or mixture

H225 FLAMMABLE LIQUIDS - Category 2  
 H302 ACUTE TOXICITY (oral) - Category 4  
 H312 ACUTE TOXICITY (dermal) - Category 4  
 H332 ACUTE TOXICITY (inhalation) - Category 4  
 H319 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A

### GHS label elements

#### Hazard pictograms



#### Signal word

: **DANGER**

#### Hazard statements

: **H225 - Highly flammable liquid and vapour.**  
**H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled.**  
**H319 - Causes serious eye irritation.**

### Precautionary statements

#### Prevention

: **P280 - Wear protective gloves. Wear eye or face protection. Wear protective clothing.**  
**P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.**  
**P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment.**  
**P242 - Use only non-sparking tools.**  
**P243 - Take precautionary measures against static discharge.**  
**P233 - Keep container tightly closed.**  
**P271 - Use only outdoors or in a well-ventilated area.**  
**P261 - Avoid breathing vapour.**  
**P270 - Do not eat, drink or smoke when using this product.**  
**P264 - Wash hands thoroughly after handling.**

## Section 2. Hazard(s) identification

- Response** : P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.  
P301 + P312 + P330 - IF SWALLOWED: Call a POISON CENTER or physician if you feel unwell. Rinse mouth.  
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.  
P302 + P352 + P312 - IF ON SKIN: Wash with plenty of soap and water. Call a POISON CENTER or physician if you feel unwell.  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 - If eye irritation persists: Get medical attention.
- Storage** : P403 - Store in a well-ventilated place.  
P235 - Keep cool.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
- Supplemental label elements** : Not applicable.
- Other hazards which do not result in classification** : None known.

## Section 3. Composition and ingredient information

**Substance/mixture** : Mixture

### CAS number/other identifiers

Ingredient name	% (w/w)	CAS number
Acetonitrile	≥75 - ≤90	75-05-8

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Skin contact** : Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.

## Section 4. First aid measures

**Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact** : Causes serious eye irritation.  
**Inhalation** : Harmful if inhaled.  
**Skin contact** : Harmful in contact with skin.  
**Ingestion** : Harmful if swallowed.

#### Over-exposure signs/symptoms

**Eye contact** : Adverse symptoms may include the following:  
 pain or irritation  
 watering  
 redness

**Inhalation** : No specific data.  
**Skin contact** : No specific data.  
**Ingestion** : No specific data.

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments** : No specific treatment.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Firefighting measures

### Extinguishing media

**Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, water spray (fog) or foam.

**Unsuitable extinguishing media** : Do not use water jet.

**Specific hazards arising from the chemical** : Highly flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard.

**Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
 carbon dioxide  
 carbon monoxide  
 nitrogen oxides  
 cyanides

## Section 5. Firefighting measures

- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Hazchem code** : •2YE

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and material for containment and cleaning up

- Methods for cleaning up** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store between the following temperatures: 18 to 25°C (64.4 to 77°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in

## Section 7. Handling and storage

unlabelled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls and personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Acetonitrile	<b>Safe Work Australia (Australia, 1/2014). Absorbed through skin.</b> STEL: 101 mg/m <sup>3</sup> 15 minutes. STEL: 60 ppm 15 minutes. TWA: 67 mg/m <sup>3</sup> 8 hours. TWA: 40 ppm 8 hours.

**Appropriate engineering controls** : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapour or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## Section 9. Physical and chemical properties

### Appearance

Physical state	: Liquid.
Colour	: Not available.
Odour	: Not available.
Odour threshold	: 42 ppm
pH	: Not available.
Melting point	: -46°C (-50.8°F)
Boiling point	: 82°C (179.6°F)
Flash point	: Closed cup: 12.8°C (55°F)
Evaporation rate	: 2.33 (butyl acetate = 1)
Flammability (solid, gas)	: Not applicable.
Lower and upper explosive (flammable) limits	: Lower: 3% Upper: 16%
Vapour pressure	: 9.7 kPa (72.75 mm Hg) [room temperature]
Vapour density	: 1.4 [Air = 1]
Relative density	: 0.8
Density	: 0.7868 g/cm <sup>3</sup> [20°C (68°F)]
Solubility	: Easily soluble in the following materials: cold water, hot water and acetone. Soluble in the following materials: methanol.
Solubility in water	: 74000 g/l
Partition coefficient: n-octanol/water	: -0.34
Auto-ignition temperature	: 524°C (975.2°F)
Decomposition temperature	: 120°C (248°F)
Viscosity	: Not available.

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/ingredient name	Result	Species	Dose	Exposure
Acetonitrile	LC50 Inhalation Vapour LD50 Oral	Rat Rat	17100 ppm 2460 mg/kg	4 hours -

## Section 11. Toxicological information

### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Acetonitrile	Eyes - Moderate irritant	Rabbit	-	24 hours 100 microliters	-
	Skin - Mild irritant	Rabbit	-	500 milligrams	-

### Sensitisation

Not available.

### Mutagenicity

Not available.

### Carcinogenicity

Not available.

### Reproductive toxicity

Not available.

### Teratogenicity

Not available.

### Specific target organ toxicity (single exposure)

Not available.

### Specific target organ toxicity (repeated exposure)

Not available.

### Aspiration hazard

Not available.

**Information on likely routes of exposure** : Routes of entry anticipated: Oral, Dermal, Inhalation.

### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Harmful if inhaled.
- Skin contact** : Harmful in contact with skin.
- Ingestion** : Harmful if swallowed.

### Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

### Delayed and immediate effects as well as chronic effects from short and long-term exposure

#### Short term exposure

- Potential immediate effects** : Not available.
- Potential delayed effects** : Not available.

#### Long term exposure



## Section 11. Toxicological information

**Potential immediate effects** : Not available.

**Potential delayed effects** : Not available.

### Potential chronic health effects

Not available.

**General** :  No known significant effects or critical hazards.

**Carcinogenicity** :  No known significant effects or critical hazards.

**Mutagenicity** :  No known significant effects or critical hazards.

**Teratogenicity** :  No known significant effects or critical hazards.

**Developmental effects** :  No known significant effects or critical hazards.

**Fertility effects** :  No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

Route	ATE value
<input checked="" type="checkbox"/> Oral	572.5 mg/kg
Dermal	1259.5 mg/kg
Inhalation (vapours)	12.59 mg/l

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
<input checked="" type="checkbox"/> Acetonitrile	Acute IC50 3685000 µg/l Fresh water	Aquatic plants - Lemna minor	96 hours
	Acute LC50 3600000 µg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Pimephales promelas	96 hours
	Chronic NOEC 1000000 µg/l Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 160000 µg/l Fresh water	Daphnia - Daphnia magna	21 days

### Persistence and degradability

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
<input checked="" type="checkbox"/> Acetonitrile	-	-	Readily

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Forensic Toxicology Comprehensive Mix – Submix 3, Part Number 5190-0559	-0.34	-	low
Acetonitrile	-0.34	-	low

### Mobility in soil

**Soil/water partition coefficient (K<sub>oc</sub>)** : Not available.

**Other adverse effects** :  No known significant effects or critical hazards.



## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimised wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

### Regulatory information

**ADG / IMDG / IATA** : Not regulated as Dangerous Goods according to the ADG Code .

**Additional information** : **Remarks**  
De minimis quantities

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of Marpol and the IBC Code** : Not available.

## Section 15. Regulatory information

### Standard Uniform Schedule of Medicine and Poisons

Not regulated.

### Model Work Health and Safety Regulations - Scheduled Substances

No listed substance

**Australia inventory (AICS)** : Not determined.

### International regulations

#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol (Annexes A, B, C, E)

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Inform Consent (PIC)

Not listed.

#### UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

### International lists

#### National inventory

**Canada** : Not determined.

**China** : Not determined.

## Section 15. Regulatory information

Europe	: Not determined.
Japan	: <input checked="" type="checkbox"/> Japan inventory (ENCS): Not determined. Japan inventory (ISHL): Not determined.
Malaysia	: <input checked="" type="checkbox"/> Not determined.
New Zealand	: <input checked="" type="checkbox"/> Not determined.
Philippines	: <input checked="" type="checkbox"/> Not determined.
Republic of Korea	: <input checked="" type="checkbox"/> Not determined.
Taiwan	: <input checked="" type="checkbox"/> Not determined.
Turkey	: <input checked="" type="checkbox"/> Not determined.
United States	: Not determined.

## Section 16. Any other relevant information

### History

Date of issue/Date of revision : 30/06/2016

Date of previous issue : 30/06/2014.

Version : 4

### Key to abbreviations

: ADG = Australian Dangerous Goods  
ATE = Acute Toxicity Estimate  
BCF = Bioconcentration Factor  
GHS = Globally Harmonized System of Classification and Labelling of Chemicals  
IATA = International Air Transport Association  
IBC = Intermediate Bulk Container  
IMDG = International Maritime Dangerous Goods  
LogPow = logarithm of the octanol/water partition coefficient  
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)  
NOHSC = National Occupational Health and Safety Commission  
SUSMP = Standard Uniform Schedule of Medicine and Poisons  
UN = United Nations

### Procedure used to derive the classification

Classification	Justification
<input checked="" type="checkbox"/> Flam. Liq. 2, H225 Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Eye Irrit. 2A, H319	On basis of test data Calculation method Calculation method Calculation method Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

### Notice to reader

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