Conforms to Code of Practice for the Preparation of Safety Data Sheets for Hazardous Chemicals

SAFETY DATA SHEET

Agilent Technologies

Amino Acids Kit, Part Number 5063-6588

Section 1. Identification

Product identifier : Amino Acids Kit, Part Number 5063-6588

Part no. (chemical kit) : 5063-6588

Part no. :

Sarcosine	Not available.
L-Trytophan	Not available.
L-Norvaline	Not available.
L-Glutamine	Not available.
L-Asparagine	Not available.
L-4-Hydroxyproline	Not available.
3,3′-Dithiodipropionic Acid	5062-2479
FMOC reagent 10 ampoules 1ml ea for AAA	5061-3337
OPA reagent, 10 mg/ml, 6 ampoules	5061-3335
AA, std 10pmol 10/PK	5061-3334
AA, std 25pmol 10/PK	5061-3333
AA, standard 100PMOL 10/PK	5061-3332
td 1nmol 10/PK	5061-3330
AA, standard 250PMOL 10/PK	5061-3331

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

Identified uses : Reagents and Standards for Analytical Chemistry Laboratory Use

Sarcosine	1 g
L-Trytophan	1 g
L-Norvaline	1 g
L-Glutamine	1 g
L-Asparagine	1 g
L-4-Hydroxyproline	1 g
3,3′-Dithiodipropionic Acid	1 x 5 g
FMOC reagent 10 ampoules 1ml ea for AAA	10 x 1 ml
OPA reagent, 10 mg/ml, 6 ampoules	6 x 1 ml
AA, std 10pmol 10/PK	10 x 1 ml
AA, std 25pmol 10/PK	10 x 1 ml
AA, standard 100PMOL 10/PK	10 x 1 ml
td 1nmol 10/PK	10 x 1 ml
AA, standard 250PMOL 10/PK	10 x 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

Section 2. Hazard(s) identification

3,3′-Dithiodipropionic Acid

H315	SKIN CORROSION/IRRITATION - Category 2
H319	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A
H335	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

FMOC reagent 10 ampoules 1ml ea for AAA

H225	FLAMMABLE LIQUIDS - Category 2
H302	ACUTE TOXICITY (oral) - Category 4
H312	ACUTE TOXICITY (dermal) - Category 4
H332	ACUTE TOXICITY (inhalation) - Category 4
H318	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1

OPA reagent, 10 mg/ml, 6 ampoules

H290	CORROSIVE TO METALS - Category 1
H302	ACUTE TOXICITY (oral) - Category 4
H314	SKIN CORROSION/IRRITATION - Category 1A
H318	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
H317	SKIN SENSITISATION - Category 1
H360	REPRODUCTIVE TOXICITY - Category 1
H371	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 2
H411	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2

AA, std 10pmol 10/PK

H290	CORROSIVE TO METALS - Category 1

AA, std 25pmol 10/PK

H290	CORROSIVE TO METALS - Category 1

AA, standard 100PMOL 10/PK

H290	CORROSIVE TO METALS - Category 1

td 1nmol 10/PK

H290	CORROSIVE TO METALS - Category 1

AA, standard 250PMOL 10/PK

H290	CORROSIVE TO METALS - Category 1

GHS label elements

Section 2. Hazard(s) identification

Hazard pictograms :

3,3′-Dithiodipropionic Acid

FMOC reagent 10 ampoules 1ml ea for AAA

OPA reagent, 10 mg/ml, 6 ampoules

AA, std 10pmol 10/PK

AA, std 25pmol 10/PK

AA, standard 100PMOL 10/PK

td 1nmol 10/PK

AA, standard 250PMOL 10/PK

Signal word :

Sarcosine	No signal word.
L-Trytophan	No signal word.
L-Norvaline	No signal word.
L-Glutamine	No signal word.
L-Asparagine	No signal word.
L-4-Hydroxyproline	No signal word.
3,3′-Dithiodipropionic Acid	WARNING
FMOC reagent 10 ampoules 1ml ea for AAA	DANGER
OPA reagent, 10 mg/ml, 6 ampoules	DANGER
AA, std 10pmol 10/PK	WARNING
AA, std 25pmol 10/PK	WARNING
AA, standard 100PMOL 10/PK	WARNING
td 1nmol 10/PK	WARNING
AA, standard 250PMOL 10/PK	WARNING

Section 2. Hazard(s) identification

Hazard statements :

Sarcosine	No known significant effects or critical hazards.
L-Trytophan	No known significant effects or critical hazards.
L-Norvaline	No known significant effects or critical hazards.
L-Glutamine	No known significant effects or critical hazards.
L-Asparagine	No known significant effects or critical hazards.
L-4-Hydroxyproline	No known significant effects or critical hazards.
3,3′-Dithiodipropionic Acid	H315 - Causes skin irritation. H319 - Causes serious eye irritation. H335 - May cause respiratory irritation.
FMOC reagent 10 ampoules 1ml ea for AAA	H225 - Highly flammable liquid and vapour. H302 + H312 + H332 - Harmful if swallowed, in contact with skin or if inhaled. H318 - Causes serious eye damage.
OPA reagent, 10 mg/ml, 6 ampoules	H290 - May be corrosive to metals. H302 - Harmful if swallowed. H314 - Causes severe skin burns and eye damage. H317 - May cause an allergic skin reaction. H360 - May damage fertility or the unborn child. H371 - May cause damage to organs. H411 - Toxic to aquatic life with long lasting effects.
AA, std 10pmol 10/PK	H290 - May be corrosive to metals.
AA, std 25pmol 10/PK	H290 - May be corrosive to metals.
AA, standard 100PMOL 10/PK	H290 - May be corrosive to metals.
td 1nmol 10/PK	H290 - May be corrosive to metals.
AA, standard 250PMOL 10/PK	H290 - May be corrosive to metals.

Precautionary statements

Prevention :

Sarcosine	Not applicable.
L-Trytophan	Not applicable.
L-Norvaline	Not applicable.
L-Glutamine	Not applicable.
L-Asparagine	Not applicable.
L-4-Hydroxyproline	Not applicable.
3,3′-Dithiodipropionic Acid	P280 - Wear protective gloves. Wear eye or face protection. P261 - Avoid breathing dust or mist. P264 - Wash thoroughly after handling.
FMOC reagent 10 ampoules 1ml ea for AAA	P280 - Wear protective gloves and protective clothing. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P261 - Avoid breathing vapour.
OPA reagent, 10 mg/ml, 6 ampoules	P201 - Obtain special instructions before use. P280 - Wear protective gloves, protective clothing and eye or face protection. P273 - Avoid release to the environment. P260 - Do not breathe vapour.
AA, std 10pmol 10/PK	P234 - Keep only in original packaging.
AA, std 25pmol 10/PK	P234 - Keep only in original packaging.
AA, standard 100PMOL 10/PK	P234 - Keep only in original packaging.
td 1nmol 10/PK	P234 - Keep only in original packaging.
AA, standard 250PMOL 10/PK	P234 - Keep only in original packaging.

Section 2. Hazard(s) identification

Response	:	Sarcosine	Not applicable.
		L-Trytophan	Not applicable.
		L-Norvaline	Not applicable.
		L-Glutamine	Not applicable.
		L-Asparagine	Not applicable.
		L-4-Hydroxyproline	Not applicable.
		3,3′-Dithiodipropionic Acid	P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.
		FMOC reagent 10 ampoules 1ml ea for AAA	P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.
		OPA reagent, 10 mg/ml, 6 ampoules	P391 - Collect spillage.
		AA, std 10pmol 10/PK	P390 - Absorb spillage to prevent material damage.
		AA, std 25pmol 10/PK	P390 - Absorb spillage to prevent material damage.
		AA, standard 100PMOL 10/PK	P390 - Absorb spillage to prevent material damage.
		td 1nmol 10/PK	P390 - Absorb spillage to prevent material damage.
		AA, standard 250PMOL 10/PK	P390 - Absorb spillage to prevent material damage.
Storage	:	Sarcosine	Not applicable.
		L-Trytophan	Not applicable.
		L-Norvaline	Not applicable.
		L-Glutamine	Not applicable.
		L-Asparagine	Not applicable.
		L-4-Hydroxyproline	Not applicable.
		3,3′-Dithiodipropionic Acid	P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
		FMOC reagent 10 ampoules 1ml ea for AAA	Not applicable.
		OPA reagent, 10 mg/ml, 6 ampoules	Not applicable.
		AA, std 10pmol 10/PK	Not applicable.
		AA, std 25pmol 10/PK	Not applicable.
		AA, standard 100PMOL 10/PK	Not applicable.
		td 1nmol 10/PK	Not applicable.
		AA, standard 250PMOL 10/PK	Not applicable.
Disposal	:	Sarcosine	Not applicable.
		L-Trytophan	Not applicable.
		L-Norvaline	Not applicable.
		L-Glutamine	Not applicable.
		L-Asparagine	Not applicable.
		L-4-Hydroxyproline	Not applicable.
		3,3′-Dithiodipropionic Acid	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		FMOC reagent 10 ampoules 1ml ea for AAA	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		OPA reagent, 10 mg/ml, 6 ampoules	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
		AA, std 10pmol 10/PK	Not applicable.
		AA, std 25pmol 10/PK	Not applicable.
		AA, standard 100PMOL 10/PK	Not applicable.
		td 1nmol 10/PK	Not applicable.
		AA, standard 250PMOL 10/PK	Not applicable.

Section 2. Hazard(s) identification

Supplemental label elements

Additional warning phrases :

Sarcosine	Not applicable.
L-Trytophan	Not applicable.
L-Norvaline	Not applicable.
L-Glutamine	Not applicable.
L-Asparagine	Not applicable.
L-4-Hydroxyproline	Not applicable.
3,3′-Dithiodipropionic Acid	Not applicable.
FMOC reagent 10 ampoules 1ml ea for AAA	Not applicable.
OPA reagent, 10 mg/ml, 6 ampoules	Not applicable.
AA, std 10pmol 10/PK	Not applicable.
AA, std 25pmol 10/PK	Not applicable.
AA, standard 100PMOL 10/PK	Not applicable.
td 1nmol 10/PK	Not applicable.
AA, standard 250PMOL 10/PK	Not applicable.

Other hazards which do not result in classification :

Sarcosine	May form combustible dust concentrations in air.
L-Trytophan	May form combustible dust concentrations in air.
L-Norvaline	May form combustible dust concentrations in air.
L-Glutamine	May form combustible dust concentrations in air.
L-Asparagine	May form combustible dust concentrations in air.
L-4-Hydroxyproline	May form combustible dust concentrations in air.
3,3′-Dithiodipropionic Acid	May form combustible dust concentrations in air.
FMOC reagent 10 ampoules 1ml ea for AAA	None known.
OPA reagent, 10 mg/ml, 6 ampoules	Causes severe digestive tract burns.
AA, std 10pmol 10/PK	None known.
AA, std 25pmol 10/PK	None known.
AA, standard 100PMOL 10/PK	None known.
td 1nmol 10/PK	None known.
AA, standard 250PMOL 10/PK	None known.

Section 3. Composition and ingredient information

Substance/mixture :

Sarcosine	Substance
L-Trytophan	Substance
L-Norvaline	Substance
L-Glutamine	Substance
L-Asparagine	Substance
L-4-Hydroxyproline	Substance
3,3′-Dithiodipropionic Acid	Substance
FMOC reagent 10 ampoules 1ml ea for AAA	Mixture
OPA reagent, 10 mg/ml, 6 ampoules	Mixture
AA, std 10pmol 10/PK	Mixture
AA, std 25pmol 10/PK	Mixture
AA, standard 100PMOL 10/PK	Mixture
td 1nmol 10/PK	Mixture
AA, standard 250PMOL 10/PK	Mixture

CAS number/other identifiers

Section 3. Composition and ingredient information

Ingredient name	% (w/w)	CAS number
Sarcosine		
Sarcosine	100	107-97-1
L-Trytophan		
L-Tryptophan	100	73-22-3
L-Norvaline		
Norvaline	100	6600-40-4
L-Glutamine		
Levoglutamide	100	56-85-9
L-Asparagine		
Asparagine	100	70-47-3
L-4-Hydroxyproline		
L-4-Hydroxyproline	100	51-35-4
3,3'-Dithiodipropionic Acid		
3,3'-dithiobispropionic acid	100	1119-62-6
FMOC reagent 10 ampoules 1ml ea for AAA		
Acetonitrile	≥90	75-05-8
OPA reagent, 10 mg/ml, 6 ampoules		
Potassium hydroxide	≤10	1310-58-3
boric acid	≤5	10043-35-3
3-Mercaptopropionic acid	≤3	107-96-0
Methanol	≤3	67-56-1
Phthalaldehyde	<2.5	643-79-8
Potassium thiocyanate	≤3	333-20-0

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

The total concentration of ingredients in this product, reported or not in this section, is 100%.

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact :

Sarcosine	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
L-Trytophan	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
L-Norvaline	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
L-Glutamine	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
L-Asparagine	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
L-4-Hydroxyproline	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
3,3′-Dithiodipropionic Acid	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.
FMOC reagent 10 ampoules 1ml ea for AAA	Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.
OPA reagent, 10 mg/ml, 6 ampoules	Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.
AA, std 10pmol 10/PK	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
AA, std 25pmol 10/PK	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
AA, standard 100PMOL 10/PK	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
td 1nmol 10/PK	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.
AA, standard 250PMOL 10/PK	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

Section 4. First aid measures

Inhalation	:	Sarcosine	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.
		L-Trytophan	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.
		L-Norvaline	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.
		L-Glutamine	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.
		L-Asparagine	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.
		L-4-Hydroxyproline	Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. 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.
		3,3′-Dithiodipropionic Acid	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 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.
		FMOC reagent 10 ampoules 1ml ea for AAA	Get medical attention immediately. Call a poison center or physician. 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. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie,

Section 4. First aid measures

			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.
		OPA reagent, 10 mg/ml, 6 ampoules	Get medical attention immediately. Call a poison center or physician. 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. 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.
		AA, std 10pmol 10/PK	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
		AA, std 25pmol 10/PK	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
		AA, standard 100PMOL 10/PK	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
		td 1nmol 10/PK	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
		AA, standard 250PMOL 10/PK	Remove victim to fresh air and keep at rest in a position comfortable for breathing.
Skin contact	:	Sarcosine	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		L-Trytophan	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		L-Norvaline	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		L-Glutamine	Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		L-Asparagine	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		L-4-Hydroxyproline	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		3,3′-Dithiodipropionic Acid	Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		FMOC reagent 10 ampoules 1ml ea for AAA	Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		OPA reagent, 10 mg/ml, 6	Get medical attention immediately. Call a poison

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		ampoules	center or physician. 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. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		AA, std 10pmol 10/PK	Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		AA, std 25pmol 10/PK	Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		AA, standard 100PMOL 10/PK	Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		td 1nmol 10/PK	Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
		AA, standard 250PMOL 10/PK	Wash contaminated skin with soap and water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.
Ingestion	:	Sarcosine	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		L-Trytophan	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		L-Norvaline	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		L-Glutamine	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		L-Asparagine	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		L-4-Hydroxyproline	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.
		3,3′-Dithiodipropionic Acid	Wash out mouth with water. Remove dentures if any. 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 adverse health effects persist or are severe. Never

Section 4. First aid measures

	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.
FMOC reagent 10 ampoules 1ml ea for AAA	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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. Chemical burns must be treated promptly by a 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.
OPA reagent, 10 mg/ml, 6 ampoules	Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. 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. Chemical burns must be treated promptly by a 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.
AA, std 10pmol 10/PK	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.
AA, std 25pmol 10/PK	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.
AA, standard 100PMOL 10/PK	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.
td 1nmol 10/PK	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.
AA, standard 250PMOL 10/PK	Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel.

Most important symptoms/effects, acute and delayed

Potential acute health effects

Section 4. First aid measures

Eye contact :

Sarcosine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
L-Trytophan	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
L-Norvaline	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
L-Glutamine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
L-Asparagine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
L-4-Hydroxyproline	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
3,3′-Dithiodipropionic Acid	Causes serious eye irritation.
FMOC reagent 10 ampoules 1ml ea for AAA	Causes serious eye damage.
OPA reagent, 10 mg/ml, 6 ampoules	Causes serious eye damage.
AA, std 10pmol 10/PK	No known significant effects or critical hazards.
AA, std 25pmol 10/PK	No known significant effects or critical hazards.
AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
td 1nmol 10/PK	No known significant effects or critical hazards.
AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.

Inhalation :

Sarcosine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
L-Trytophan	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
L-Norvaline	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
L-Glutamine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
L-Asparagine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
L-4-Hydroxyproline	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
3,3′-Dithiodipropionic Acid	May cause respiratory irritation.
FMOC reagent 10 ampoules 1ml ea for AAA	Harmful if inhaled.
OPA reagent, 10 mg/ml, 6 ampoules	May cause damage to organs following a single exposure if inhaled.
AA, std 10pmol 10/PK	No known significant effects or critical hazards.
AA, std 25pmol 10/PK	No known significant effects or critical hazards.
AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
td 1nmol 10/PK	No known significant effects or critical hazards.
AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.

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Skin contact :

Sarcosine	No known significant effects or critical hazards.
L-Trytophan	No known significant effects or critical hazards.
L-Norvaline	No known significant effects or critical hazards.
L-Glutamine	No known significant effects or critical hazards.
L-Asparagine	No known significant effects or critical hazards.
L-4-Hydroxyproline	No known significant effects or critical hazards.
3,3′-Dithiodipropionic Acid	Causes skin irritation.
FMOC reagent 10 ampoules 1ml ea for AAA	Harmful in contact with skin.
OPA reagent, 10 mg/ml, 6 ampoules	Causes severe burns. May cause damage to organs following a single exposure in contact with skin. May cause an allergic skin reaction.
AA, std 10pmol 10/PK	No known significant effects or critical hazards.
AA, std 25pmol 10/PK	No known significant effects or critical hazards.
AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
td 1nmol 10/PK	No known significant effects or critical hazards.
AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.

Ingestion :

Sarcosine	No known significant effects or critical hazards.
L-Trytophan	No known significant effects or critical hazards.
L-Norvaline	No known significant effects or critical hazards.
L-Glutamine	No known significant effects or critical hazards.
L-Asparagine	No known significant effects or critical hazards.
L-4-Hydroxyproline	No known significant effects or critical hazards.
3,3′-Dithiodipropionic Acid	No known significant effects or critical hazards.
FMOC reagent 10 ampoules 1ml ea for AAA	Harmful if swallowed.
OPA reagent, 10 mg/ml, 6 ampoules	Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed. May cause damage to organs following a single exposure if swallowed.
AA, std 10pmol 10/PK	No known significant effects or critical hazards.
AA, std 25pmol 10/PK	No known significant effects or critical hazards.
AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
td 1nmol 10/PK	No known significant effects or critical hazards.
AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.

Over-exposure signs/symptoms

Eye contact :

Sarcosine	Adverse symptoms may include the following: irritation redness
L-Trytophan	Adverse symptoms may include the following: irritation redness
L-Norvaline	Adverse symptoms may include the following: irritation redness
L-Glutamine	Adverse symptoms may include the following: irritation redness
L-Asparagine	Adverse symptoms may include the following: irritation redness
L-4-Hydroxyproline	Adverse symptoms may include the following: irritation redness
3,3′-Dithiodipropionic Acid	Adverse symptoms may include the following: pain or irritation watering redness

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		FMOC reagent 10 ampoules 1ml ea for AAA	Adverse symptoms may include the following: pain watering redness
		OPA reagent, 10 mg/ml, 6 ampoules	Adverse symptoms may include the following: pain watering redness
		AA, std 10pmol 10/PK	No specific data.
		AA, std 25pmol 10/PK	No specific data.
		AA, standard 100PMOL 10/PK	No specific data.
		td 1nmol 10/PK	No specific data.
		AA, standard 250PMOL 10/PK	No specific data.
Inhalation	:	Sarcosine	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-Trytophan	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-Norvaline	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-Glutamine	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-Asparagine	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-4-Hydroxyproline	Adverse symptoms may include the following: respiratory tract irritation coughing
		3,3′-Dithiodipropionic Acid	Adverse symptoms may include the following: respiratory tract irritation coughing
		FMOC reagent 10 ampoules 1ml ea for AAA	No specific data.
		OPA reagent, 10 mg/ml, 6 ampoules	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
		AA, std 10pmol 10/PK	No specific data.
		AA, std 25pmol 10/PK	No specific data.
		AA, standard 100PMOL 10/PK	No specific data.
		td 1nmol 10/PK	No specific data.
		AA, standard 250PMOL 10/PK	No specific data.
Skin contact	:	Sarcosine	No specific data.
		L-Trytophan	No specific data.
		L-Norvaline	No specific data.
		L-Glutamine	No specific data.
		L-Asparagine	No specific data.
		L-4-Hydroxyproline	No specific data.
		3,3′-Dithiodipropionic Acid	Adverse symptoms may include the following: irritation redness
		FMOC reagent 10 ampoules 1ml ea for AAA	Adverse symptoms may include the following:

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		pain or irritation redness blistering may occur
	OPA reagent, 10 mg/ml, 6 ampoules	Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced foetal weight increase in foetal deaths skeletal malformations
	AA, std 10pmol 10/PK	No specific data.
	AA, std 25pmol 10/PK	No specific data.
	AA, standard 100PMOL 10/PK	No specific data.
	td 1nmol 10/PK	No specific data.
	AA, standard 250PMOL 10/PK	No specific data.
Ingestion :	Sarcosine	No specific data.
	L-Trytophan	No specific data.
	L-Norvaline	No specific data.
	L-Glutamine	No specific data.
	L-Asparagine	No specific data.
	L-4-Hydroxyproline	No specific data.
	3,3′-Dithiodipropionic Acid	No specific data.
	FMOC reagent 10 ampoules 1ml ea for AAA	Adverse symptoms may include the following: stomach pains
	OPA reagent, 10 mg/ml, 6 ampoules	Adverse symptoms may include the following: stomach pains reduced foetal weight increase in foetal deaths skeletal malformations
	AA, std 10pmol 10/PK	No specific data.
	AA, std 25pmol 10/PK	No specific data.
	AA, standard 100PMOL 10/PK	No specific data.
	td 1nmol 10/PK	No specific data.
	AA, standard 250PMOL 10/PK	No specific data.

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

Notes to physician :	Sarcosine	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.
	L-Trytophan	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.
	L-Norvaline	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.
	L-Glutamine	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.
	L-Asparagine	In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical

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		surveillance for 48 hours.
	L-4-Hydroxyproline	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.
	3,3′-Dithiodipropionic Acid	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	FMOC reagent 10 ampoules 1ml ea for AAA	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.
	OPA reagent, 10 mg/ml, 6 ampoules	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.
	AA, std 10pmol 10/PK	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	AA, std 25pmol 10/PK	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	AA, standard 100PMOL 10/PK	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	td 1nmol 10/PK	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
	AA, standard 250PMOL 10/PK	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments :	Sarcosine	No specific treatment.
	L-Trytophan	No specific treatment.
	L-Norvaline	No specific treatment.
	L-Glutamine	No specific treatment.
	L-Asparagine	No specific treatment.
	L-4-Hydroxyproline	No specific treatment.
	3,3′-Dithiodipropionic Acid	No specific treatment.
	FMOC reagent 10 ampoules 1ml ea for AAA	No specific treatment.
	OPA reagent, 10 mg/ml, 6 ampoules	No specific treatment.
	AA, std 10pmol 10/PK	No specific treatment.
	AA, std 25pmol 10/PK	No specific treatment.
	AA, standard 100PMOL 10/PK	No specific treatment.
	td 1nmol 10/PK	No specific treatment.
	AA, standard 250PMOL 10/PK	No specific treatment.
Protection of first-aiders :	Sarcosine	No action shall be taken involving any personal risk or without suitable training.
	L-Trytophan	No action shall be taken involving any personal risk or without suitable training.
	L-Norvaline	No action shall be taken involving any personal risk or without suitable training.
	L-Glutamine	No action shall be taken involving any personal risk or without suitable training.
	L-Asparagine	No action shall be taken involving any personal risk or without suitable training.
	L-4-Hydroxyproline	No action shall be taken involving any personal risk or without suitable training.
	3,3′-Dithiodipropionic Acid	No action shall be taken involving any personal risk or without suitable training. If it is suspected that

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	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.
FMOC reagent 10 ampoules 1ml ea for AAA	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.
OPA reagent, 10 mg/ml, 6 ampoules	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.
AA, std 10pmol 10/PK	No action shall be taken involving any personal risk or without suitable training.
AA, std 25pmol 10/PK	No action shall be taken involving any personal risk or without suitable training.
AA, standard 100PMOL 10/PK	No action shall be taken involving any personal risk or without suitable training.
td 1nmol 10/PK	No action shall be taken involving any personal risk or without suitable training.
AA, standard 250PMOL 10/PK	No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

Suitable extinguishing media :

Sarcosine	Use dry chemical powder.
L-Trytophan	Use dry chemical powder.
L-Norvaline	Use dry chemical powder.
L-Glutamine	Use dry chemical powder.
L-Asparagine	Use dry chemical powder.
L-4-Hydroxyproline	Use dry chemical powder.
3,3′-Dithiodipropionic Acid	Use dry chemical powder.
FMOC reagent 10 ampoules 1ml ea for AAA	Use dry chemical, CO_2, water spray (fog) or foam.
OPA reagent, 10 mg/ml, 6 ampoules	Use an extinguishing agent suitable for the surrounding fire.
AA, std 10pmol 10/PK	Use an extinguishing agent suitable for the surrounding fire.
AA, std 25pmol 10/PK	Use an extinguishing agent suitable for the surrounding fire.
AA, standard 100PMOL 10/PK	Use an extinguishing agent suitable for the surrounding fire.
td 1nmol 10/PK	Use an extinguishing agent suitable for the surrounding fire.
AA, standard 250PMOL 10/PK	Use an extinguishing agent suitable for the surrounding fire.

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Unsuitable extinguishing media	:	Sarcosine	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
		L-Trytophan	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
		L-Norvaline	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
		L-Glutamine	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
		L-Asparagine	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
		L-4-Hydroxyproline	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
		3,3′-Dithiodipropionic Acid	Avoid high pressure media which could cause the formation of a potentially explosible dust-air mixture.
		FMOC reagent 10 ampoules 1ml ea for AAA	Do not use water jet.
		OPA reagent, 10 mg/ml, 6 ampoules	None known.
		AA, std 10pmol 10/PK	None known.
		AA, std 25pmol 10/PK	None known.
		AA, standard 100PMOL 10/PK	None known.
		td 1nmol 10/PK	None known.
		AA, standard 250PMOL 10/PK	None known.
Specific hazards arising from the chemical	:	Sarcosine	May form explosible dust-air mixture if dispersed.
		L-Trytophan	May form explosible dust-air mixture if dispersed.
		L-Norvaline	May form explosible dust-air mixture if dispersed.
		L-Glutamine	May form explosible dust-air mixture if dispersed.
		L-Asparagine	May form explosible dust-air mixture if dispersed.
		L-4-Hydroxyproline	May form explosible dust-air mixture if dispersed.
		3,3′-Dithiodipropionic Acid	May form explosible dust-air mixture if dispersed.
		FMOC reagent 10 ampoules 1ml ea for AAA	Highly flammable liquid and vapour. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
		OPA reagent, 10 mg/ml, 6 ampoules	In a fire or if heated, a pressure increase will occur and the container may burst. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
		AA, std 10pmol 10/PK	In a fire or if heated, a pressure increase will occur and the container may burst.
		AA, std 25pmol 10/PK	In a fire or if heated, a pressure increase will occur and the container may burst.
		AA, standard 100PMOL 10/PK	In a fire or if heated, a pressure increase will occur and the container may burst.
		td 1nmol 10/PK	In a fire or if heated, a pressure increase will occur and the container may burst.
		AA, standard 250PMOL 10/PK	In a fire or if heated, a pressure increase will occur and the container may burst.
Hazardous thermal decomposition products	:	Sarcosine	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
		L-Trytophan	Decomposition products may include the following materials: carbon dioxide carbon monoxide

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		nitrogen oxides
	L-Norvaline	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
	L-Glutamine	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
	L-Asparagine	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
	L-4-Hydroxyproline	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides
	3,3′-Dithiodipropionic Acid	Decomposition products may include the following materials: carbon dioxide carbon monoxide sulfur oxides
	FMOC reagent 10 ampoules 1ml ea for AAA	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides cyanides
	OPA reagent, 10 mg/ml, 6 ampoules	Decomposition products may include the following materials: carbon dioxide carbon monoxide nitrogen oxides sulfur oxides metal oxide/oxides Formaldehyde.
	AA, std 10pmol 10/PK	No specific data.
	AA, std 25pmol 10/PK	No specific data.
	AA, standard 100PMOL 10/PK	No specific data.
	td 1nmol 10/PK	No specific data.
	AA, standard 250PMOL 10/PK	No specific data.
Special protective actions for fire-fighters :	Sarcosine	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.
	L-Trytophan	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.
	L-Norvaline	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

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	without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
L-Glutamine	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.
L-Asparagine	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.
L-4-Hydroxyproline	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.
3,3′-Dithiodipropionic Acid	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.
FMOC reagent 10 ampoules 1ml ea for AAA	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.
OPA reagent, 10 mg/ml, 6 ampoules	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.
AA, std 10pmol 10/PK	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.
AA, std 25pmol 10/PK	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.
AA, standard 100PMOL 10/PK	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.
td 1nmol 10/PK	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.
AA, standard 250PMOL 10/PK	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.

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Special protective equipment for fire-fighters	:	Sarcosine	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		L-Trytophan	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		L-Norvaline	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		L-Glutamine	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		L-Asparagine	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		L-4-Hydroxyproline	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		3,3′-Dithiodipropionic Acid	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		FMOC reagent 10 ampoules 1ml ea for AAA	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		OPA reagent, 10 mg/ml, 6 ampoules	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		AA, std 10pmol 10/PK	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		AA, std 25pmol 10/PK	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		AA, standard 100PMOL 10/PK	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		td 1nmol 10/PK	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
		AA, standard 250PMOL 10/PK	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	:	Sarcosine	Not available.
		L-Trytophan	Not available.
		L-Norvaline	Not available.
		L-Glutamine	Not available.
		L-Asparagine	Not available.
		L-4-Hydroxyproline	Not available.
		3,3′-Dithiodipropionic Acid	Not available.

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FMOC reagent 10 ampoules 1ml ea for AAA	•2YE
OPA reagent, 10 mg/ml, 6 ampoules	2R
AA, std 10pmol 10/PK	Not available.
AA, std 25pmol 10/PK	Not available.
AA, standard 100PMOL 10/PK	Not available.
td 1nmol 10/PK	Not available.
AA, standard 250PMOL 10/PK	Not available.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel :

Sarcosine	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 dust. Put on appropriate personal protective equipment.
L-Trytophan	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 dust. Put on appropriate personal protective equipment.
L-Norvaline	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 dust. Put on appropriate personal protective equipment.
L-Glutamine	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 dust. Put on appropriate personal protective equipment.
L-Asparagine	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 dust. Put on appropriate personal protective equipment.
L-4-Hydroxyproline	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 dust. Put on appropriate personal protective equipment.

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3,3′-Dithiodipropionic Acid	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 dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
FMOC reagent 10 ampoules 1ml ea for AAA	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. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
OPA reagent, 10 mg/ml, 6 ampoules	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. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
AA, std 10pmol 10/PK	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. Put on appropriate personal protective equipment.
AA, std 25pmol 10/PK	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. Put on appropriate personal protective equipment.
AA, standard 100PMOL 10/PK	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. Put on appropriate personal protective equipment.
td 1nmol 10/PK	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. Put on appropriate personal protective equipment.
AA, standard 250PMOL 10/PK	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. Put on appropriate personal protective equipment.

Section 6. Accidental release measures

For emergency responders :	Sarcosine	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".
	L-Trytophan	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".
	L-Norvaline	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".
	L-Glutamine	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".
	L-Asparagine	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".
	L-4-Hydroxyproline	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".
	3,3′-Dithiodipropionic Acid	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".
	FMOC reagent 10 ampoules 1ml ea for AAA	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".
	OPA reagent, 10 mg/ml, 6 ampoules	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".
	AA, std 10pmol 10/PK	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".
	AA, std 25pmol 10/PK	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".
	AA, standard 100PMOL 10/PK	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".
	td 1nmol 10/PK	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".
	AA, standard 250PMOL 10/PK	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".

Section 6. Accidental release measures

Environmental precautions	:	Sarcosine	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).
		L-Trytophan	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).
		L-Norvaline	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).
		L-Glutamine	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).
		L-Asparagine	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).
		L-4-Hydroxyproline	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).
		3,3′-Dithiodipropionic Acid	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).
		FMOC reagent 10 ampoules 1ml ea for AAA	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).
		OPA reagent, 10 mg/ml, 6 ampoules	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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
		AA, std 10pmol 10/PK	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).
		AA, std 25pmol 10/PK	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).
		AA, standard 100PMOL 10/PK	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).
		td 1nmol 10/PK	Avoid dispersal of spilt material and runoff and

Section 6. Accidental release measures

	contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
AA, standard 250PMOL 10/PK	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 :

Sarcosine	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
L-Trytophan	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
L-Norvaline	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
L-Glutamine	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
L-Asparagine	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
L-4-Hydroxyproline	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Vacuum or sweep up material and place in a designated, labelled waste container. Dispose of via a licensed waste disposal contractor.
3,3′-Dithiodipropionic Acid	Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
FMOC reagent 10 ampoules 1ml ea for AAA	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.
OPA reagent, 10 mg/ml, 6 ampoules	Stop leak if without risk. Move containers from spill area. 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. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.
AA, std 10pmol 10/PK	Stop leak if without risk. Move containers from spill area. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium

Section 6. Accidental release measures

	hydroxide. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.
AA, std 25pmol 10/PK	Stop leak if without risk. Move containers from spill area. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.
AA, standard 100PMOL 10/PK	Stop leak if without risk. Move containers from spill area. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.
td 1nmol 10/PK	Stop leak if without risk. Move containers from spill area. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.
AA, standard 250PMOL 10/PK	Stop leak if without risk. Move containers from spill area. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.

Section 7. Handling and storage

Precautions for safe handling

Protective measures	:	Sarcosine	Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.
		L-Trytophan	Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.
		L-Norvaline	Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust

Section 7. Handling and storage

	accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.
L-Glutamine	Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.
L-Asparagine	Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.
L-4-Hydroxyproline	Put on appropriate personal protective equipment (see Section 8). Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material.
3,3′-Dithiodipropionic Acid	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing dust. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be

Section 7. Handling and storage

	protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.
FMOC reagent 10 ampoules 1ml ea for AAA	Put on appropriate personal protective equipment (see Section 8). Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. 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.
OPA reagent, 10 mg/ml, 6 ampoules	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.
AA, std 10pmol 10/PK	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.
AA, std 25pmol 10/PK	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.
AA, standard 100PMOL 10/PK	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with

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			eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.
		td 1nmol 10/PK	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.
		AA, standard 250PMOL 10/PK	Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Absorb spillage to prevent material damage.
Advice on general occupational hygiene	:	Sarcosine	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.
		L-Trytophan	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.
		L-Norvaline	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.
		L-Glutamine	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.
		L-Asparagine	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.
		L-4-Hydroxyproline	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face

Section 7. Handling and storage

	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.
3,3′-Dithiodipropionic Acid	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.
FMOC reagent 10 ampoules 1ml ea for AAA	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.
OPA reagent, 10 mg/ml, 6 ampoules	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.
AA, std 10pmol 10/PK	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.
AA, std 25pmol 10/PK	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.
AA, standard 100PMOL 10/PK	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.
td 1nmol 10/PK	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.
AA, standard 250PMOL 10/PK	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.

Section 7. Handling and storage

Conditions for safe storage, including any incompatibilities :	Sarcosine	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 oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	L-Trytophan	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 oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	L-Norvaline	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 oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	L-Glutamine	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 oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
	L-Asparagine	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 oxidising 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 unlabelled containers. Use appropriate containment to avoid

Section 7. Handling and storage

	environmental contamination. See Section 10 for incompatible materials before handling or use.
L-4-Hydroxyproline	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 oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
3,3′-Dithiodipropionic Acid	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. Store locked up. Eliminate all ignition sources. Separate from oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
FMOC reagent 10 ampoules 1ml ea for AAA	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. Store locked up. Eliminate all ignition sources. Separate from oxidising 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
OPA reagent, 10 mg/ml, 6 ampoules	Store between the following temperatures: 2 to 8°C (35.6 to 46.4°F). Store in accordance with local regulations. 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. Store in corrosive resistant container with a resistant inner liner. Store locked up. Keep away from metals. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
AA, std 10pmol 10/PK	Store in accordance with local regulations. 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. Store in corrosive resistant container with a resistant inner liner. Separate from alkalis. Keep away from metals. Keep container tightly closed and sealed until ready for use. Containers that have been

Section 7. Handling and storage

	opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
AA, std 25pmol 10/PK	Store in accordance with local regulations. 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. Store in corrosive resistant container with a resistant inner liner. Separate from alkalis. Keep away from metals. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
AA, standard 100PMOL 10/PK	Store in accordance with local regulations. 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. Store in corrosive resistant container with a resistant inner liner. Separate from alkalis. Keep away from metals. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
td 1nmol 10/PK	Store in accordance with local regulations. 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. Store in corrosive resistant container with a resistant inner liner. Separate from alkalis. Keep away from metals. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.
AA, standard 250PMOL 10/PK	Store in accordance with local regulations. 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. Store in corrosive resistant container with a resistant inner liner. Separate from alkalis. Keep away from metals. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls and personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
FMOC reagent 10 ampoules 1ml ea for AAA	
Acetonitrile	**Safe Work Australia (Australia, 10/2022). Absorbed through skin.** STEL: 101 mg/m³ 15 minutes. STEL: 60 ppm 15 minutes. TWA: 67 mg/m³ 8 hours. TWA: 40 ppm 8 hours.
OPA reagent, 10 mg/ml, 6 ampoules	
Potassium hydroxide	**Safe Work Australia (Australia, 10/2022).** PEAK: 2 mg/m³
boric acid	**ACGIH TLV (United States, 1/2022). [Borate compounds, Inorganic]** TWA: 2 mg/m³ 8 hours. Form: Inhalable fraction STEL: 6 mg/m³ 15 minutes. Form: Inhalable fraction
Methanol	**Safe Work Australia (Australia, 10/2022). Absorbed through skin.** STEL: 328 mg/m³ 15 minutes. STEL: 250 ppm 15 minutes. TWA: 262 mg/m³ 8 hours. TWA: 200 ppm 8 hours.
Phthalaldehyde	**ACGIH TLV (United States, 1/2022). Absorbed through skin. Skin sensitiser. Inhalation sensitiser.** C: 0.1 ppb Form: Vapor fraction SL: 25 µg/100 cm²
Potassium thiocyanate	**Safe Work Australia (Australia, 10/2022). [Cyanides (as CN)] Absorbed through skin.** TWA: 5 mg/m³, (as CN) 8 hours.

Biological exposure indices

No exposure indices known.

Appropriate engineering controls : If user operations generate dust, fumes, gas, vapour or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Section 8. Exposure controls and personal protection

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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.

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.

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 and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state :

Sarcosine	Solid. [Powder. Deliquescent solid.]
L-Trytophan	Solid. [Crystalline powder.]
L-Norvaline	Solid. [Crystalline powder.]
L-Glutamine	Solid. [Needles.]
L-Asparagine	Solid. [Crystals.]
L-4-Hydroxyproline	Solid. [Crystals.]
3,3′-Dithiodipropionic Acid	Solid. [Powder.]
FMOC reagent 10 ampoules 1ml ea for AAA	Liquid. [Clear.]
OPA reagent, 10 mg/ml, 6 ampoules	Liquid.
AA, std 10pmol 10/PK	Liquid.
AA, std 25pmol 10/PK	Liquid.
AA, standard 100PMOL 10/PK	Liquid.
td 1nmol 10/PK	Liquid.
AA, standard 250PMOL 10/PK	Liquid.

Colour :

Sarcosine	Not available.
L-Trytophan	White to yellowish.
L-Norvaline	Not available.
L-Glutamine	Not available.
L-Asparagine	Not available.
L-4-Hydroxyproline	White.
3,3′-Dithiodipropionic Acid	White.
FMOC reagent 10 ampoules 1ml ea for AAA	Colourless.
OPA reagent, 10 mg/ml, 6 ampoules	Yellow. [Light]

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		AA, std 10pmol 10/PK	Colourless.
		AA, std 25pmol 10/PK	Colourless.
		AA, standard 100PMOL 10/PK	Colourless.
		td 1nmol 10/PK	Colourless.
		AA, standard 250PMOL 10/PK	Colourless.
Odour	:	Sarcosine	Not available.
		L-Trytophan	Odourless.
		L-Norvaline	Not available.
		L-Glutamine	Not available.
		L-Asparagine	Not available.
		L-4-Hydroxyproline	Odourless.
		3,3′-Dithiodipropionic Acid	Unpleasant. [Strong]
		FMOC reagent 10 ampoules 1ml ea for AAA	Ethereal. [Slight]
		OPA reagent, 10 mg/ml, 6 ampoules	Slight
		AA, std 10pmol 10/PK	Not available.
		AA, std 25pmol 10/PK	Not available.
		AA, standard 100PMOL 10/PK	Not available.
		td 1nmol 10/PK	Not available.
		AA, standard 250PMOL 10/PK	Not available.
Odour threshold	:	Sarcosine	Not available.
		L-Trytophan	Not available.
		L-Norvaline	Not available.
		L-Glutamine	Not available.
		L-Asparagine	Not available.
		L-4-Hydroxyproline	Not available.
		3,3′-Dithiodipropionic Acid	Not available.
		FMOC reagent 10 ampoules 1ml ea for AAA	70 ppm
		OPA reagent, 10 mg/ml, 6 ampoules	Not available.
		AA, std 10pmol 10/PK	Not available.
		AA, std 25pmol 10/PK	Not available.
		AA, standard 100PMOL 10/PK	Not available.
		td 1nmol 10/PK	Not available.
		AA, standard 250PMOL 10/PK	Not available.
pH	:	Sarcosine	Not available.
		L-Trytophan	5.5 to 7 [Conc. (% w/w): 1%]
		L-Norvaline	Not available.
		L-Glutamine	Not available.
		L-Asparagine	Not available.
		L-4-Hydroxyproline	Not available.
		3,3′-Dithiodipropionic Acid	Not available.
		FMOC reagent 10 ampoules 1ml ea for AAA	Not available.
		OPA reagent, 10 mg/ml, 6 ampoules	10.4
		AA, std 10pmol 10/PK	1.5
		AA, std 25pmol 10/PK	1.5
		AA, standard 100PMOL 10/PK	1.5
		td 1nmol 10/PK	1.5
		AA, standard 250PMOL 10/PK	1.5

Section 9. Physical and chemical properties and safety characteristics

Melting point/freezing point	:	Sarcosine	208 to 212°C (406.4 to 413.6°F)
		L-Trytophan	278.3 to 279.3°C (532.9 to 534.7°F) [EU A.1]
		L-Norvaline	300°C (572°F)
		L-Glutamine	Decomposes
		L-Asparagine	234 to 235°C (453.2 to 455°F)
		L-4-Hydroxyproline	274°C (525.2°F)
		3,3′-Dithiodipropionic Acid	155 to 158°C (311 to 316.4°F)
		FMOC reagent 10 ampoules 1ml ea for AAA	-45°C (-49°F)
		OPA reagent, 10 mg/ml, 6 ampoules	Not available.
		AA, std 10pmol 10/PK	0°C (32°F)
		AA, std 25pmol 10/PK	0°C (32°F)
		AA, standard 100PMOL 10/PK	0°C (32°F)
		td 1nmol 10/PK	0°C (32°F)
		AA, standard 250PMOL 10/PK	0°C (32°F)
Boiling point, initial boiling point, and boiling range	:	Sarcosine	Not available.
		L-Trytophan	Not available.
		L-Norvaline	Not available.
		L-Glutamine	Not available.
		L-Asparagine	Not available.
		L-4-Hydroxyproline	Not available.
		3,3′-Dithiodipropionic Acid	Not available.
		FMOC reagent 10 ampoules 1ml ea for AAA	81.6°C (178.9°F)
		OPA reagent, 10 mg/ml, 6 ampoules	Not available.
		AA, std 10pmol 10/PK	100°C (212°F)
		AA, std 25pmol 10/PK	100°C (212°F)
		AA, standard 100PMOL 10/PK	100°C (212°F)
		td 1nmol 10/PK	100°C (212°F)
		AA, standard 250PMOL 10/PK	100°C (212°F)
Flash point	:	Sarcosine	Not applicable.
		L-Trytophan	Not applicable.
		L-Norvaline	Not applicable.
		L-Glutamine	Not applicable.
		L-Asparagine	Not applicable.
		L-4-Hydroxyproline	Not applicable.
		3,3′-Dithiodipropionic Acid	Not applicable.
		FMOC reagent 10 ampoules 1ml ea for AAA	Closed cup: 2°C (35.6°F)
		OPA reagent, 10 mg/ml, 6 ampoules	Not available.
		AA, std 10pmol 10/PK	Not available.
		AA, std 25pmol 10/PK	Not available.
		AA, standard 100PMOL 10/PK	Not available.
		td 1nmol 10/PK	Not available.
		AA, standard 250PMOL 10/PK	Not available.

Section 9. Physical and chemical properties and safety characteristics

Ingredient name	Closed cup °C	Closed cup °F	Closed cup Method	Open cup °C	Open cup °F	Open cup Method
OPA reagent, 10 mg/ml, 6 ampoules						
Methanol	9.7	49.5	Abel-Pensky	-	-	-
Phthalaldehyde	>110	>230	Setaflash	-	-	-

Evaporation rate :

Sarcosine	Not available.
L-Trytophan	Not available.
L-Norvaline	Not available.
L-Glutamine	Not available.
L-Asparagine	Not available.
L-4-Hydroxyproline	Not available.
3,3′-Dithiodipropionic Acid	Not available.
FMOC reagent 10 ampoules 1ml ea for AAA	5.79 (butyl acetate = 1)
OPA reagent, 10 mg/ml, 6 ampoules	<1 (butyl acetate = 1)
AA, std 10pmol 10/PK	Not available.
AA, std 25pmol 10/PK	Not available.
AA, standard 100PMOL 10/PK	Not available.
td 1nmol 10/PK	Not available.
AA, standard 250PMOL 10/PK	Not available.

Flammability :

Sarcosine	Not available.
L-Trytophan	Not available.
L-Norvaline	Not available.
L-Glutamine	Not available.
L-Asparagine	Not available.
L-4-Hydroxyproline	Not available.
3,3′-Dithiodipropionic Acid	Not available.
FMOC reagent 10 ampoules 1ml ea for AAA	Not applicable.
OPA reagent, 10 mg/ml, 6 ampoules	Not applicable.
AA, std 10pmol 10/PK	Not applicable.
AA, std 25pmol 10/PK	Not applicable.
AA, standard 100PMOL 10/PK	Not applicable.
td 1nmol 10/PK	Not applicable.
AA, standard 250PMOL 10/PK	Not applicable.

Lower and upper explosion limit/flammability limit :

Sarcosine	Not applicable.
L-Trytophan	Not applicable.
L-Norvaline	Not applicable.
L-Glutamine	Not applicable.
L-Asparagine	Not applicable.
L-4-Hydroxyproline	Not applicable.
3,3′-Dithiodipropionic Acid	Not applicable.
FMOC reagent 10 ampoules 1ml ea for AAA	Lower: 4.4% Upper: 16%
OPA reagent, 10 mg/ml, 6 ampoules	Not available.
AA, std 10pmol 10/PK	Not available.
AA, std 25pmol 10/PK	Not available.

Section 9. Physical and chemical properties and safety characteristics

AA, standard 100PMOL 10/PK	Not available.
td 1nmol 10/PK	Not available.
AA, standard 250PMOL 10/PK	Not available.

Vapour pressure :

L-Trytophan	0 kPa (0 mm Hg)
L-Glutamine	0.0000000025 kPa (0.000000019 mm Hg)
L-Asparagine	0.0000000064 kPa (0.000000048 mm Hg)
L-4-Hydroxyproline	0 kPa (0 mm Hg)

Ingredient name	Vapour Pressure at 20˚C			Vapour pressure at 50˚C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
FMOC reagent 10 ampoules 1ml ea for AAA						
Acetonitrile	70.89	9.5	-	-	-	-
OPA reagent, 10 mg/ml, 6 ampoules						
Methanol	126.96	16.9	-	-	-	-
water	17.5	2.3	-	92.258	12.3	-
AA, std 10pmol 10/PK						
water	17.5	2.3	-	92.258	12.3	-
AA, std 25pmol 10/PK						
water	17.5	2.3	-	92.258	12.3	-
AA, standard 100PMOL 10/PK						
water	17.5	2.3	-	92.258	12.3	-
td 1nmol 10/PK						
water	17.5	2.3	-	92.258	12.3	-
AA, standard 250PMOL 10/PK						
water	17.5	2.3	-	92.258	12.3	-

Section 9. Physical and chemical properties and safety characteristics

Relative vapour density :

Sarcosine	Not applicable.
L-Trytophan	Not applicable.
L-Norvaline	Not applicable.
L-Glutamine	Not applicable.
L-Asparagine	Not applicable.
L-4-Hydroxyproline	4.5 [Air = 1]
3,3′-Dithiodipropionic Acid	Not applicable.
FMOC reagent 10 ampoules 1ml ea for AAA	Not available.
OPA reagent, 10 mg/ml, 6 ampoules	Not available.
AA, std 10pmol 10/PK	Not available.
AA, std 25pmol 10/PK	Not available.
AA, standard 100PMOL 10/PK	Not available.
td 1nmol 10/PK	Not available.
AA, standard 250PMOL 10/PK	Not available.

Relative density :

Sarcosine	Not available.
L-Trytophan	1.34
L-Norvaline	Not available.
L-Glutamine	1.469 [OECD 109]
L-Asparagine	1.54 [OECD 109]
L-4-Hydroxyproline	1.479 [OECD 109]
3,3′-Dithiodipropionic Acid	Not available.
FMOC reagent 10 ampoules 1ml ea for AAA	0.78
OPA reagent, 10 mg/ml, 6 ampoules	1.045
AA, std 10pmol 10/PK	Not available.
AA, std 25pmol 10/PK	Not available.
AA, standard 100PMOL 10/PK	Not available.
td 1nmol 10/PK	Not available.
AA, standard 250PMOL 10/PK	Not available.

Solubility(ies) :

Media	Result
Sarcosine	
water	Soluble
L-Trytophan	
water	Soluble
diethyl ether	Insoluble
L-Norvaline	
water	Soluble
L-Glutamine	
water	Soluble
L-Asparagine	
water	Soluble
methanol	Insoluble
diethyl ether	Insoluble
L-4-Hydroxyproline	
water	Soluble
3,3′-Dithiodipropionic Acid	
water	Soluble
FMOC reagent 10 ampoules 1ml ea for AAA	
water	Soluble
OPA reagent, 10 mg/ml, 6 ampoules	
water	Soluble
AA, std 10pmol 10/PK	
water	Soluble

Section 9. Physical and chemical properties and safety characteristics

AA, std 25pmol 10/PK	
water	Soluble
AA, standard 100PMOL 10/PK	
water	Soluble
td 1nmol 10/PK	
water	Soluble
AA, standard 250PMOL 10/PK	
water	Soluble

Partition coefficient: n-octanol/water :

Sarcosine	-2.78
L-Trytophan	-1.06
L-Norvaline	-2.11
L-Glutamine	-3.64
L-Asparagine	-3.82
L-4-Hydroxyproline	-3.17
3,3′-Dithiodipropionic Acid	Not available.
FMOC reagent 10 ampoules 1ml ea for AAA	<1
OPA reagent, 10 mg/ml, 6 ampoules	Not applicable.
AA, std 10pmol 10/PK	Not applicable.
AA, std 25pmol 10/PK	Not applicable.
AA, standard 100PMOL 10/PK	Not applicable.
td 1nmol 10/PK	Not applicable.
AA, standard 250PMOL 10/PK	Not applicable.

Auto-ignition temperature :

Sarcosine	Not applicable.
L-Trytophan	>400°C (>752°F) [VDI 2263]
L-Norvaline	Not applicable.
L-Glutamine	Not applicable.
L-Asparagine	Not applicable.
L-4-Hydroxyproline	Not applicable.
3,3′-Dithiodipropionic Acid	Not applicable.
FMOC reagent 10 ampoules 1ml ea for AAA	524°C (975.2°F)

Ingredient name	°C	°F	Method
OPA reagent, 10 mg/ml, 6 ampoules			
Methanol	455	851	DIN 51794

Decomposition temperature :

Sarcosine	212°C (413.6°F)
L-Trytophan	289°C (552.2°F)
L-Norvaline	Not available.
L-Glutamine	185°C (365°F)
L-Asparagine	Not available.
L-4-Hydroxyproline	275°C (527°F)
3,3′-Dithiodipropionic Acid	Not available.
FMOC reagent 10 ampoules 1ml ea for AAA	Not available.
OPA reagent, 10 mg/ml, 6 ampoules	Not available.
AA, std 10pmol 10/PK	Not available.
AA, std 25pmol 10/PK	Not available.
AA, standard 100PMOL 10/PK	Not available.
td 1nmol 10/PK	Not available.
AA, standard 250PMOL 10/PK	Not available.

Section 9. Physical and chemical properties and safety characteristics

Viscosity :

Sarcosine	Not applicable.
L-Trytophan	Not applicable.
L-Norvaline	Not applicable.
L-Glutamine	Not applicable.
L-Asparagine	Not applicable.
L-4-Hydroxyproline	Not applicable.
3,3′-Dithiodipropionic Acid	Not applicable.
FMOC reagent 10 ampoules 1ml ea for AAA	Not available.
OPA reagent, 10 mg/ml, 6 ampoules	Not available.
AA, std 10pmol 10/PK	Not available.
AA, std 25pmol 10/PK	Not available.
AA, standard 100PMOL 10/PK	Not available.
td 1nmol 10/PK	Not available.
AA, standard 250PMOL 10/PK	Not available.

Particle characteristics

Median particle size :

Sarcosine	Not available.
L-Trytophan	Not available.
L-Norvaline	Not available.
L-Glutamine	Not available.
L-Asparagine	Not available.
L-4-Hydroxyproline	Not available.
3,3′-Dithiodipropionic Acid	Not available.
FMOC reagent 10 ampoules 1ml ea for AAA	Not applicable.
OPA reagent, 10 mg/ml, 6 ampoules	Not applicable.
AA, std 10pmol 10/PK	Not applicable.
AA, std 25pmol 10/PK	Not applicable.
AA, standard 100PMOL 10/PK	Not applicable.
td 1nmol 10/PK	Not applicable.
AA, standard 250PMOL 10/PK	Not applicable.

Section 10. Stability and reactivity

Reactivity :

Sarcosine	No specific test data related to reactivity available for this product or its ingredients.
L-Trytophan	No specific test data related to reactivity available for this product or its ingredients.
L-Norvaline	No specific test data related to reactivity available for this product or its ingredients.
L-Glutamine	No specific test data related to reactivity available for this product or its ingredients.
L-Asparagine	No specific test data related to reactivity available for this product or its ingredients.
L-4-Hydroxyproline	No specific test data related to reactivity available for this product or its ingredients.
3,3′-Dithiodipropionic Acid	No specific test data related to reactivity available for this product or its ingredients.
FMOC reagent 10 ampoules 1ml ea for AAA	No specific test data related to reactivity available for this product or its ingredients.
OPA reagent, 10 mg/ml, 6 ampoules	No specific test data related to reactivity available for this product or its ingredients.
AA, std 10pmol 10/PK	No specific test data related to reactivity available for this product or its ingredients.
AA, std 25pmol 10/PK	No specific test data related to reactivity available for this product or its ingredients.

Section 10. Stability and reactivity

	AA, standard 100PMOL 10/PK	No specific test data related to reactivity available for this product or its ingredients.
	td 1nmol 10/PK	No specific test data related to reactivity available for this product or its ingredients.
	AA, standard 250PMOL 10/PK	No specific test data related to reactivity available for this product or its ingredients.

Chemical stability :

Sarcosine	The product is stable.
L-Trytophan	The product is stable.
L-Norvaline	The product is stable.
L-Glutamine	The product is stable.
L-Asparagine	The product is stable.
L-4-Hydroxyproline	The product is stable.
3,3′-Dithiodipropionic Acid	The product is stable.
FMOC reagent 10 ampoules 1ml ea for AAA	The product is stable.
OPA reagent, 10 mg/ml, 6 ampoules	The product is stable.
AA, std 10pmol 10/PK	The product is stable.
AA, std 25pmol 10/PK	The product is stable.
AA, standard 100PMOL 10/PK	The product is stable.
td 1nmol 10/PK	The product is stable.
AA, standard 250PMOL 10/PK	The product is stable.

Possibility of hazardous reactions :

Sarcosine	Under normal conditions of storage and use, hazardous reactions will not occur.
L-Trytophan	Under normal conditions of storage and use, hazardous reactions will not occur.
L-Norvaline	Under normal conditions of storage and use, hazardous reactions will not occur.
L-Glutamine	Under normal conditions of storage and use, hazardous reactions will not occur.
L-Asparagine	Under normal conditions of storage and use, hazardous reactions will not occur.
L-4-Hydroxyproline	Under normal conditions of storage and use, hazardous reactions will not occur.
3,3′-Dithiodipropionic Acid	Under normal conditions of storage and use, hazardous reactions will not occur.
FMOC reagent 10 ampoules 1ml ea for AAA	Under normal conditions of storage and use, hazardous reactions will not occur.
OPA reagent, 10 mg/ml, 6 ampoules	Under normal conditions of storage and use, hazardous reactions will not occur.
AA, std 10pmol 10/PK	Under normal conditions of storage and use, hazardous reactions will not occur.
AA, std 25pmol 10/PK	Under normal conditions of storage and use, hazardous reactions will not occur.
AA, standard 100PMOL 10/PK	Under normal conditions of storage and use, hazardous reactions will not occur.
td 1nmol 10/PK	Under normal conditions of storage and use, hazardous reactions will not occur.
AA, standard 250PMOL 10/PK	Under normal conditions of storage and use, hazardous reactions will not occur.

Section 10. Stability and reactivity

Conditions to avoid	:	Sarcosine	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
		L-Trytophan	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
		L-Norvaline	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
		L-Glutamine	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
		L-Asparagine	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
		L-4-Hydroxyproline	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
		3,3′-Dithiodipropionic Acid	Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. Prevent dust accumulation.
		FMOC reagent 10 ampoules 1ml ea for AAA	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. Store away from direct sunlight.
		OPA reagent, 10 mg/ml, 6 ampoules	No specific data.
		AA, std 10pmol 10/PK	No specific data.
		AA, std 25pmol 10/PK	No specific data.
		AA, standard 100PMOL 10/PK	No specific data.
		td 1nmol 10/PK	No specific data.
		AA, standard 250PMOL 10/PK	No specific data.

Section 10. Stability and reactivity

Incompatible materials :

Sarcosine	Reactive or incompatible with the following materials: oxidising materials
L-Trytophan	Reactive or incompatible with the following materials: oxidising materials
L-Norvaline	Reactive or incompatible with the following materials: oxidising materials
L-Glutamine	Reactive or incompatible with the following materials: oxidising materials
L-Asparagine	Reactive or incompatible with the following materials: oxidising materials
L-4-Hydroxyproline	Reactive or incompatible with the following materials: oxidising materials
3,3′-Dithiodipropionic Acid	Reactive or incompatible with the following materials: oxidising materials
FMOC reagent 10 ampoules 1ml ea for AAA	Reactive or incompatible with the following materials: oxidising materials
OPA reagent, 10 mg/ml, 6 ampoules	Reactive or incompatible with the following materials: metals
AA, std 10pmol 10/PK	Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials: alkalis metals
AA, std 25pmol 10/PK	Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials: alkalis metals
AA, standard 100PMOL 10/PK	Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials: alkalis metals
td 1nmol 10/PK	Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials: alkalis metals
AA, standard 250PMOL 10/PK	Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air. Reactive or incompatible with the following materials: alkalis metals

Hazardous decomposition products :

Sarcosine	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
L-Trytophan	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
L-Norvaline	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
L-Glutamine	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 10. Stability and reactivity

L-Asparagine	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
L-4-Hydroxyproline	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
3,3′-Dithiodipropionic Acid	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
FMOC reagent 10 ampoules 1ml ea for AAA	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
OPA reagent, 10 mg/ml, 6 ampoules	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
AA, std 10pmol 10/PK	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
AA, std 25pmol 10/PK	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
AA, standard 100PMOL 10/PK	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
td 1nmol 10/PK	Under normal conditions of storage and use, hazardous decomposition products should not be produced.
AA, standard 250PMOL 10/PK	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
L-Trytophan				
L-Tryptophan	LD50 Oral	Rat	>16 g/kg	-
L-Glutamine				
Levoglutamide	LD50 Oral	Rat	7500 mg/kg	-
FMOC reagent 10 ampoules 1ml ea for AAA				
Acetonitrile	LC50 Inhalation Vapour	Rat	17100 ppm	4 hours
	LD50 Oral	Rat	2460 mg/kg	-
OPA reagent, 10 mg/ml, 6 ampoules				
Potassium hydroxide	LD50 Oral	Rat	273 mg/kg	-
boric acid	LC50 Inhalation Dusts and mists	Rat - Male, Female	>2.12 mg/l	4 hours
	LD50 Dermal	Rabbit - Male, Female	>2000 mg/kg	-
3-Mercaptopropionic acid	LC50 Inhalation Dusts and mists	Rat - Male, Female	1818 mg/m³	4 hours
	LD50 Oral	Rat	96 mg/kg	-
Methanol	LC50 Inhalation Vapour	Rat	189.95 mg/l	1 hours
	LC50 Inhalation Vapour	Rat	145000 ppm	1 hours
	LC50 Inhalation Vapour	Rat	83.84 mg/l	4 hours
	LC50 Inhalation Vapour	Rat	64000 ppm	4 hours
	LD50 Dermal	Rabbit	15800 mg/kg	-

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	LD50 Oral	Rat	5600 mg/kg	-
Phthalaldehyde	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	238.12 mg/kg	-
Potassium thiocyanate	LD50 Oral	Rat	854 mg/kg	-

Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
FMOC reagent 10 ampoules 1ml ea for AAA					
Acetonitrile	Eyes - Moderate irritant	Rabbit	-	24 hours 100 uL	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
OPA reagent, 10 mg/ml, 6 ampoules					
Potassium hydroxide	Eyes - Moderate irritant	Rabbit	-	24 hours 1 mg	-
	Skin - Severe irritant	Guinea pig	-	24 hours 50 mg	-
	Skin - Severe irritant	Rabbit	-	24 hours 50 mg	-
Methanol	Eyes - Moderate irritant	Rabbit	-	24 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	40 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-

Sensitisation

Not available.

Mutagenicity

Conclusion/Summary : Not available.

Carcinogenicity

Conclusion/Summary : Not available.

Reproductive toxicity

Conclusion/Summary : Not available.

Teratogenicity

Conclusion/Summary : Not available.

Specific target organ toxicity (single exposure)

Name	Category	Route of exposure	Target organs
3,3′-Dithiodipropionic Acid			
3,3'-dithiobispropionic acid	Category 3	-	Respiratory tract irritation
OPA reagent, 10 mg/ml, 6 ampoules			
Methanol	Category 1	-	-
Phthalaldehyde	Category 3	-	Respiratory tract irritation

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Not available.

Section 11. Toxicological information

Information on likely routes of exposure :

Sarcosine	Not available.
L-Trytophan	Not available.
L-Norvaline	Not available.
L-Glutamine	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
L-Asparagine	Not available.
L-4-Hydroxyproline	Not available.
3,3′-Dithiodipropionic Acid	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
FMOC reagent 10 ampoules 1ml ea for AAA	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
OPA reagent, 10 mg/ml, 6 ampoules	Routes of entry anticipated: Oral, Dermal, Inhalation, Eyes.
AA, std 10pmol 10/PK	Not available.
AA, std 25pmol 10/PK	Not available.
AA, standard 100PMOL 10/PK	Not available.
td 1nmol 10/PK	Not available.
AA, standard 250PMOL 10/PK	Not available.

Potential acute health effects

Eye contact :

Sarcosine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
L-Trytophan	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
L-Norvaline	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
L-Glutamine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
L-Asparagine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
L-4-Hydroxyproline	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the eyes.
3,3′-Dithiodipropionic Acid	Causes serious eye irritation.
FMOC reagent 10 ampoules 1ml ea for AAA	Causes serious eye damage.
OPA reagent, 10 mg/ml, 6 ampoules	Causes serious eye damage.
AA, std 10pmol 10/PK	No known significant effects or critical hazards.
AA, std 25pmol 10/PK	No known significant effects or critical hazards.
AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
td 1nmol 10/PK	No known significant effects or critical hazards.
AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.

Inhalation :

Sarcosine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
L-Trytophan	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
L-Norvaline	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
L-Glutamine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation

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		of the nose, throat and lungs.
	L-Asparagine	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
	L-4-Hydroxyproline	Exposure to airborne concentrations above statutory or recommended exposure limits may cause irritation of the nose, throat and lungs.
	3,3′-Dithiodipropionic Acid	May cause respiratory irritation.
	FMOC reagent 10 ampoules 1ml ea for AAA	Harmful if inhaled.
	OPA reagent, 10 mg/ml, 6 ampoules	May cause damage to organs following a single exposure if inhaled.
	AA, std 10pmol 10/PK	No known significant effects or critical hazards.
	AA, std 25pmol 10/PK	No known significant effects or critical hazards.
	AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
	td 1nmol 10/PK	No known significant effects or critical hazards.
	AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.
Skin contact :	Sarcosine	No known significant effects or critical hazards.
	L-Trytophan	No known significant effects or critical hazards.
	L-Norvaline	No known significant effects or critical hazards.
	L-Glutamine	No known significant effects or critical hazards.
	L-Asparagine	No known significant effects or critical hazards.
	L-4-Hydroxyproline	No known significant effects or critical hazards.
	3,3′-Dithiodipropionic Acid	Causes skin irritation.
	FMOC reagent 10 ampoules 1ml ea for AAA	Harmful in contact with skin.
	OPA reagent, 10 mg/ml, 6 ampoules	Causes severe burns. May cause damage to organs following a single exposure in contact with skin. May cause an allergic skin reaction.
	AA, std 10pmol 10/PK	No known significant effects or critical hazards.
	AA, std 25pmol 10/PK	No known significant effects or critical hazards.
	AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
	td 1nmol 10/PK	No known significant effects or critical hazards.
	AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.
Ingestion :	Sarcosine	No known significant effects or critical hazards.
	L-Trytophan	No known significant effects or critical hazards.
	L-Norvaline	No known significant effects or critical hazards.
	L-Glutamine	No known significant effects or critical hazards.
	L-Asparagine	No known significant effects or critical hazards.
	L-4-Hydroxyproline	No known significant effects or critical hazards.
	3,3′-Dithiodipropionic Acid	No known significant effects or critical hazards.
	FMOC reagent 10 ampoules 1ml ea for AAA	Harmful if swallowed.
	OPA reagent, 10 mg/ml, 6 ampoules	Severely corrosive to the digestive tract. Causes severe burns. Harmful if swallowed. May cause damage to organs following a single exposure if swallowed.
	AA, std 10pmol 10/PK	No known significant effects or critical hazards.
	AA, std 25pmol 10/PK	No known significant effects or critical hazards.
	AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
	td 1nmol 10/PK	No known significant effects or critical hazards.
	AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

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Eye contact	:	Sarcosine	Adverse symptoms may include the following: irritation redness
		L-Trytophan	Adverse symptoms may include the following: irritation redness
		L-Norvaline	Adverse symptoms may include the following: irritation redness
		L-Glutamine	Adverse symptoms may include the following: irritation redness
		L-Asparagine	Adverse symptoms may include the following: irritation redness
		L-4-Hydroxyproline	Adverse symptoms may include the following: irritation redness
		3,3′-Dithiodipropionic Acid	Adverse symptoms may include the following: pain or irritation watering redness
		FMOC reagent 10 ampoules 1ml ea for AAA	Adverse symptoms may include the following: pain watering redness
		OPA reagent, 10 mg/ml, 6 ampoules	Adverse symptoms may include the following: pain watering redness
		AA, std 10pmol 10/PK	No specific data.
		AA, std 25pmol 10/PK	No specific data.
		AA, standard 100PMOL 10/PK	No specific data.
		td 1nmol 10/PK	No specific data.
		AA, standard 250PMOL 10/PK	No specific data.
Inhalation	:	Sarcosine	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-Trytophan	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-Norvaline	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-Glutamine	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-Asparagine	Adverse symptoms may include the following: respiratory tract irritation coughing
		L-4-Hydroxyproline	Adverse symptoms may include the following: respiratory tract irritation coughing
		3,3′-Dithiodipropionic Acid	Adverse symptoms may include the following: respiratory tract irritation coughing
		FMOC reagent 10 ampoules 1ml ea for AAA	No specific data.

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	OPA reagent, 10 mg/ml, 6 ampoules	Adverse symptoms may include the following: reduced foetal weight increase in foetal deaths skeletal malformations
	AA, std 10pmol 10/PK	No specific data.
	AA, std 25pmol 10/PK	No specific data.
	AA, standard 100PMOL 10/PK	No specific data.
	td 1nmol 10/PK	No specific data.
	AA, standard 250PMOL 10/PK	No specific data.
Skin contact :	Sarcosine	No specific data.
	L-Trytophan	No specific data.
	L-Norvaline	No specific data.
	L-Glutamine	No specific data.
	L-Asparagine	No specific data.
	L-4-Hydroxyproline	No specific data.
	3,3′-Dithiodipropionic Acid	Adverse symptoms may include the following: irritation redness
	FMOC reagent 10 ampoules 1ml ea for AAA	Adverse symptoms may include the following: pain or irritation redness blistering may occur
	OPA reagent, 10 mg/ml, 6 ampoules	Adverse symptoms may include the following: pain or irritation redness blistering may occur reduced foetal weight increase in foetal deaths skeletal malformations
	AA, std 10pmol 10/PK	No specific data.
	AA, std 25pmol 10/PK	No specific data.
	AA, standard 100PMOL 10/PK	No specific data.
	td 1nmol 10/PK	No specific data.
	AA, standard 250PMOL 10/PK	No specific data.
Ingestion :	Sarcosine	No specific data.
	L-Trytophan	No specific data.
	L-Norvaline	No specific data.
	L-Glutamine	No specific data.
	L-Asparagine	No specific data.
	L-4-Hydroxyproline	No specific data.
	3,3′-Dithiodipropionic Acid	No specific data.
	FMOC reagent 10 ampoules 1ml ea for AAA	Adverse symptoms may include the following: stomach pains
	OPA reagent, 10 mg/ml, 6 ampoules	Adverse symptoms may include the following: stomach pains reduced foetal weight increase in foetal deaths skeletal malformations
	AA, std 10pmol 10/PK	No specific data.
	AA, std 25pmol 10/PK	No specific data.
	AA, standard 100PMOL 10/PK	No specific data.
	td 1nmol 10/PK	No specific data.

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AA, standard 250PMOL 10/PK	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

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

General :	Sarcosine	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
	L-Trytophan	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
	L-Norvaline	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
	L-Glutamine	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
	L-Asparagine	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
	L-4-Hydroxyproline	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
	3,3′-Dithiodipropionic Acid	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.
	FMOC reagent 10 ampoules 1ml ea for AAA	No known significant effects or critical hazards.
	OPA reagent, 10 mg/ml, 6 ampoules	Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.
	AA, std 10pmol 10/PK	No known significant effects or critical hazards.
	AA, std 25pmol 10/PK	No known significant effects or critical hazards.
	AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
	td 1nmol 10/PK	No known significant effects or critical hazards.
	AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.
Carcinogenicity :	Sarcosine	No known significant effects or critical hazards.
	L-Trytophan	No known significant effects or critical hazards.
	L-Norvaline	No known significant effects or critical hazards.
	L-Glutamine	No known significant effects or critical hazards.
	L-Asparagine	No known significant effects or critical hazards.
	L-4-Hydroxyproline	No known significant effects or critical hazards.
	3,3′-Dithiodipropionic Acid	No known significant effects or critical hazards.
	FMOC reagent 10 ampoules 1ml ea for AAA	No known significant effects or critical hazards.
	OPA reagent, 10 mg/ml, 6 ampoules	No known significant effects or critical hazards.
	AA, std 10pmol 10/PK	No known significant effects or critical hazards.
	AA, std 25pmol 10/PK	No known significant effects or critical hazards.
	AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
	td 1nmol 10/PK	No known significant effects or critical hazards.
	AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.

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Mutagenicity	:	Sarcosine	No known significant effects or critical hazards.
		L-Trytophan	No known significant effects or critical hazards.
		L-Norvaline	No known significant effects or critical hazards.
		L-Glutamine	No known significant effects or critical hazards.
		L-Asparagine	No known significant effects or critical hazards.
		L-4-Hydroxyproline	No known significant effects or critical hazards.
		3,3′-Dithiodipropionic Acid	No known significant effects or critical hazards.
		FMOC reagent 10 ampoules 1ml ea for AAA	No known significant effects or critical hazards.
		OPA reagent, 10 mg/ml, 6 ampoules	No known significant effects or critical hazards.
		AA, std 10pmol 10/PK	No known significant effects or critical hazards.
		AA, std 25pmol 10/PK	No known significant effects or critical hazards.
		AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
		td 1nmol 10/PK	No known significant effects or critical hazards.
		AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.
Reproductive toxicity	:	Sarcosine	No known significant effects or critical hazards.
		L-Trytophan	No known significant effects or critical hazards.
		L-Norvaline	No known significant effects or critical hazards.
		L-Glutamine	No known significant effects or critical hazards.
		L-Asparagine	No known significant effects or critical hazards.
		L-4-Hydroxyproline	No known significant effects or critical hazards.
		3,3′-Dithiodipropionic Acid	No known significant effects or critical hazards.
		FMOC reagent 10 ampoules 1ml ea for AAA	No known significant effects or critical hazards.
		OPA reagent, 10 mg/ml, 6 ampoules	May damage fertility or the unborn child.
		AA, std 10pmol 10/PK	No known significant effects or critical hazards.
		AA, std 25pmol 10/PK	No known significant effects or critical hazards.
		AA, standard 100PMOL 10/PK	No known significant effects or critical hazards.
		td 1nmol 10/PK	No known significant effects or critical hazards.
		AA, standard 250PMOL 10/PK	No known significant effects or critical hazards.

Numerical measures of toxicity

Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapours) (mg/l)	Inhalation (dusts and mists) (mg/l)
L-Glutamine					
Levoglutamide	7500	N/A	N/A	N/A	N/A
FMOC reagent 10 ampoules 1ml ea for AAA					
FMOC reagent 10 ampoules 1ml ea for AAA	502.5	1105.5	N/A	11.1	N/A
Acetonitrile	500	1100	N/A	11	N/A
OPA reagent, 10 mg/ml, 6 ampoules					
OPA reagent, 10 mg/ml, 6 ampoules	1715.2	15000.0	N/A	150.0	90.9
Potassium hydroxide	500	N/A	N/A	N/A	N/A
boric acid	5100	N/A	N/A	N/A	N/A
3-Mercaptopropionic acid	96	N/A	N/A	N/A	1.818
Methanol	100	300	N/A	3	N/A
Phthalaldehyde	238.12	N/A	N/A	N/A	N/A
Potassium thiocyanate	854	N/A	N/A	N/A	N/A

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Other information :

FMOC reagent 10 ampoules 1ml ea for AAA	Adverse symptoms may include the following: May cause headache, weakness, dizziness, shortness of breath, cyanosis, rapid heart beat, unconsciousness and possible death.
OPA reagent, 10 mg/ml, 6 ampoules	Adverse symptoms may include the following: blurred or double vision, Eye contact can result in corneal damage or blindness. Repeated or prolonged exposure to the substance can produce liver damage. May cause eye irritation. Repeated or prolonged exposure to the substance can produce reproductive system damage. Narcotic effect. May cause nervous system disturbances.

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Toxicity

Product/ingredient name	Result	Species	Exposure
L-Glutamine			
Levoglutamide	Acute EC50 >100 mg/l Fresh water	Algae	72 hours
	Acute EC50 >100 mg/l Fresh water	Daphnia	48 hours
	Acute NOEC 100 mg/l Fresh water	Algae	72 hours
	Acute NOEC 100 mg/l Fresh water	Daphnia	48 hours
L-Asparagine			
Asparagine	Acute EC50 >100 mg/l Fresh water	Algae - *Pseudokirchneriella subcapitata*	72 hours
	Acute NOEC 100 mg/l Fresh water	Algae - *Pseudokirchneriella subcapitata*	72 hours
L-4-Hydroxyproline			
L-4-Hydroxyproline	Acute EC50 71.6 mg/l Fresh water	Algae - *Pseudokirchneriella subcapitata*	72 hours
	Acute EC50 >100 mg/l Fresh water	Daphnia	48 hours
	Acute NOEC 25 mg/l Fresh water	Algae - *Pseudokirchneriella subcapitata*	72 hours
	Acute NOEC 100 mg/l Fresh water	Daphnia	48 hours
FMOC reagent 10 ampoules 1ml ea for AAA			
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
OPA reagent, 10 mg/ml, 6 ampoules			
Potassium hydroxide	Acute LC50 80 ppm Fresh water	Fish - *Gambusia affinis* - Adult	96 hours
boric acid	Acute LC50 45.5 mg/l Fresh water	Crustaceans - *Ceriodaphnia dubia*	48 hours
	Acute LC50 133000 µg/l Fresh water	Daphnia - *Daphnia magna* - Neonate	48 hours
	Acute LC50 75 mg/l Marine water	Fish - *Pagrus major*	96 hours
	Chronic NOEC 6000 µg/l Fresh water	Daphnia - *Daphnia magna*	21 days
	Chronic NOEC 2100 µg/l Fresh water	Fish - *Oncorhynchus mykiss*	87 days
3-Mercaptopropionic acid	Acute EC50 26 mg/l Fresh water	Algae	72 hours
	Acute EC50 9 mg/l Fresh water	Daphnia	48 hours
	Acute LC50 98 mg/l Fresh water	Fish	96 hours
	Acute NOEC 4.1 mg/l Fresh water	Algae	72 hours
Methanol	Acute EC50 2736 mg/l Marine water	Algae - *Ulva pertusa*	96 hours
	Acute LC50 2500000 µg/l Marine water	Crustaceans - *Crangon crangon*	48 hours

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	Acute LC50 3289 mg/l Fresh water	- Adult Daphnia - *Daphnia magna* - Neonate	48 hours
	Acute LC50 290 mg/l Fresh water	Fish - *Danio rerio* - Egg	96 hours
	Chronic NOEC 9.96 mg/l Marine water	Algae - *Ulva pertusa*	96 hours
Phthalaldehyde	Acute EC50 90 ppb Fresh water	Daphnia - *Daphnia magna*	48 hours
	Acute LC50 20 ppb Fresh water	Fish - *Oncorhynchus mykiss*	96 hours
Potassium thiocyanate	Acute LC50 11000 µg/l Fresh water	Daphnia - *Daphnia pulex*	48 hours
	Acute LC50 13.3 mg/l Fresh water	Fish - *Salvelinus fontinalis*	96 hours
	Chronic NOEC 1100 µg/l Fresh water	Fish - *Lepomis macrochirus* - Juvenile (Fledgling, Hatchling, Weanling)	124 days

Persistence and degradability

Product/ingredient name	Test	Result	Dose	Inoculum
L-Trytophan				
L-Tryptophan	OECD 301B Ready Biodegradability - CO2 Evolution Test	77 % - 28 days	-	-
FMOC reagent 10 ampoules 1ml ea for AAA				
Acetonitrile	OECD 310 Ready Biodegradability - CO2 in Sealed Vessels (Headspace Test)	70 % - Readily - 21 days	-	Activated sludge
OPA reagent, 10 mg/ml, 6 ampoules				
3-Mercaptopropionic acid	301A Ready Biodegradability - DOC Die-Away Test	96 % - Readily - 28 days	-	-

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
L-Trytophan			
L-Tryptophan	-	-	Readily
L-Glutamine			
Levoglutamide	-	-	Readily
L-Asparagine			
Asparagine	-	-	Readily
L-4-Hydroxyproline			
L-4-Hydroxyproline	-	-	Readily
3,3′-Dithiodipropionic Acid			
3,3'-dithiobispropionic acid	-	-	Readily
FMOC reagent 10 ampoules 1ml ea for AAA			
Acetonitrile	-	-	Readily
OPA reagent, 10 mg/ml, 6 ampoules			

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boric acid	-	-	Not readily
3-Mercaptopropionic acid	-	-	Readily
Methanol	-	-	Readily

Bioaccumulative potential

Product/ingredient name	$LogP_{ow}$	BCF	Potential
Sarcosine			
Sarcosine	-2.78	-	Low
L-Trytophan			
L-Tryptophan	-1.06	-	Low
L-Norvaline			
Norvaline	-2.11	-	Low
L-Glutamine			
Levoglutamide	-3.64	-	Low
L-Asparagine			
Asparagine	-3.82	-	Low
L-4-Hydroxyproline			
L-4-Hydroxyproline	-3.17	-	Low
FMOC reagent 10 ampoules 1ml ea for AAA			
FMOC reagent 10 ampoules 1ml ea for AAA	<1	-	Low
Acetonitrile	-0.34	3	Low
OPA reagent, 10 mg/ml, 6 ampoules			
boric acid	-1.09	-	Low
3-Mercaptopropionic acid	-2.32	-	Low
Methanol	-0.77	<10	Low
Phthalaldehyde	0.99	-	Low
Potassium thiocyanate	-2.52	-	Low

Mobility in soil

Soil/water partition coefficient (K_{OC}) : 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. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport 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 IMO instruments : Not available.

Section 15. Regulatory information

Standard for the Uniform Scheduling of Medicines and Poisons

6, 5

Model Work Health and Safety Regulations - Scheduled Substances

Ingredient name	Schedule
OPA reagent, 10 mg/ml, 6 ampoules methanol	Restricted hazardous chemical [For spray painting if the substance contains more than 1% by volume]

International regulations

Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

Montreal Protocol

Not listed.

Stockholm Convention on Persistent Organic Pollutants

Not listed.

Rotterdam Convention on Prior Informed Consent (PIC)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Inventory list

Australia : Not determined.

New Zealand : Not determined.

United States : Not determined.

Section 16. Any other relevant information

History

Date of issue/Date of revision : 12/12/2023

Date of previous issue : 28/04/2023

Version : 6.1

Key to abbreviations : ADG = Australian Dangerous Goods
ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road
ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association

Section 16. Any other relevant information

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)
N/A = Not available
SUSMP = Standard Uniform Schedule of Medicine and Poisons
UN = United Nations

Procedure used to derive the classification

Classification	Justification
3,3′-Dithiodipropionic Acid	
SKIN CORROSION/IRRITATION - Category 2	Expert judgment
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A	Expert judgment
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3	Expert judgment
FMOC reagent 10 ampoules 1ml ea for AAA	
FLAMMABLE LIQUIDS - Category 2	On basis of test data
ACUTE TOXICITY (oral) - Category 4	Calculation method
ACUTE TOXICITY (dermal) - Category 4	Calculation method
ACUTE TOXICITY (inhalation) - Category 4	Calculation method
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Calculation method
OPA reagent, 10 mg/ml, 6 ampoules	
CORROSIVE TO METALS - Category 1	Expert judgment
ACUTE TOXICITY (oral) - Category 4	Calculation method
SKIN CORROSION/IRRITATION - Category 1A	Calculation method
SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1	Calculation method
SKIN SENSITISATION - Category 1	Calculation method
REPRODUCTIVE TOXICITY - Category 1	Calculation method
SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 2	Calculation method
LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2	Calculation method
AA, std 10pmol 10/PK	
CORROSIVE TO METALS - Category 1	Expert judgment
AA, std 25pmol 10/PK	
CORROSIVE TO METALS - Category 1	Expert judgment
AA, standard 100PMOL 10/PK	
CORROSIVE TO METALS - Category 1	Expert judgment
td 1nmol 10/PK	
CORROSIVE TO METALS - Category 1	Expert judgment
AA, standard 250PMOL 10/PK	
CORROSIVE TO METALS - Category 1	Expert judgment

Indicates information that has changed from previously issued version.

Notice to reader

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