SAFETY DATA SHEET

Agilent Technologies

Amino Acids Kit, Part Number 5063-6588

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

1.1 Product identifier

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

CAS number :

Sarcosine	107-97-1
L-Trytophan	73-22-3
L-Norvaline	6600-40-4
L-Glutamine	56-85-9
L-Asparagine	70-47-3
L-4-Hydroxyproline	51-35-4
3,3′-Dithiodipropionic Acid	1119-62-6
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.

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

1.2 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

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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

Uses advised against : None known.

1.3 Details of the supplier of the safety data sheet

Agilent Technologies LDA UK Ltd.
5500 Lakeside Cheadle Royal Business Park,
Cheadle, Cheshire, SK8 3GR
United Kingdom
Tel: +44 (0) 345 712 5292

e-mail address of person responsible for this SDS : pdl-msds_author@agilent.com

1.4 Emergency telephone number

Emergency telephone number (with hours of operation) : CHEMTREC®: +(44)-870-8200418

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Product definition :

Sarcosine	Mono-constituent substance
L-Trytophan	Mono-constituent substance
L-Norvaline	Mono-constituent substance
L-Glutamine	Mono-constituent substance
L-Asparagine	Mono-constituent substance
L-4-Hydroxyproline	Mono-constituent substance
3,3′-Dithiodipropionic Acid	Mono-constituent 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

Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

3,3′-Dithiodipropionic Acid

H315	SKIN CORROSION/IRRITATION	Category 2
H319	SERIOUS EYE DAMAGE/EYE IRRITATION	Category 2
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
H319	SERIOUS EYE DAMAGE/EYE IRRITATION	Category 2

SECTION 2: Hazards identification

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
H317	SKIN SENSITISATION	Category 1
H360FD	REPRODUCTIVE TOXICITY	Category 1B
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

Sarcosine	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
L-Trytophan	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
L-Norvaline	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
L-Glutamine	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
L-Asparagine	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
L-4-Hydroxyproline	The product is not classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
3,3′-Dithiodipropionic Acid	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
FMOC reagent 10 ampoules 1ml ea for AAA	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
OPA reagent, 10 mg/ml, 6 ampoules	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
AA, std 10pmol 10/PK	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
AA, std 25pmol 10/PK	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
AA, standard 100PMOL 10/PK	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
td 1nmol 10/PK	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.
AA, standard 250PMOL 10/PK	The product is classified as hazardous according to UK CLP Regulation SI 2019/720 as amended.

Ingredients of unknown toxicity : OPA reagent, 10 mg/ml, 6 ampoules — Percentage of the mixture consisting of ingredient(s) of unknown acute dermal toxicity: 1 - 10%
Percentage of the mixture consisting of ingredient(s) of unknown acute inhalation toxicity: 1 - 10%

See Section 16 for the full text of the H statements declared above.

See Section 11 for more detailed information on health effects and symptoms.

SECTION 2: Hazards identification

2.2 Label elements

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: Hazards 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. H319 - Causes serious eye irritation.
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. H360FD - May damage fertility. May damage the unborn child. 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. P270 - Do not eat, drink or smoke when using this product.
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.
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: Hazards 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	P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.
		OPA reagent, 10 mg/ml, 6 ampoules	P391 - Collect spillage. P308 + P313 - IF exposed or concerned: Get medical advice or attention.
		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.
Hazardous ingredients	:	FMOC reagent 10 ampoules 1ml ea for AAA	acetonitrile
		OPA reagent, 10 mg/ml, 6 ampoules	potassium hydroxide; boric acid; 3-mercaptopropionic acid; methanol and phthalaldehyde

SECTION 2: Hazards identification

Supplemental label elements	:	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	Contains isocyanates. May produce an allergic reaction.
		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.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	:	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	Restricted to professional users.
		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.

Special packaging requirements

Containers to be fitted with child-resistant fastenings	:	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.

SECTION 2: Hazards identification

Tactile warning of danger :

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.

2.3 Other hazards

Product meets the criteria for PBT or vPvB according to Regulation (EC) No. 1907/2006, Annex XIII :

PBT	P	B	T	vPvB	vP	vB
Sarcosine						
N/A	N/A	N/A	N/A	N/A	N/A	N/A
L-Trytophan						
No	N/A	N/A	No	N/A	N/A	N/A
L-Norvaline						
N/A	N/A	N/A	N/A	N/A	N/A	N/A
L-Glutamine						
No	N/A	N/A	No	N/A	N/A	N/A
L-Asparagine						
No	N/A	N/A	No	N/A	N/A	N/A
L-4-Hydroxyproline						
No	N/A	N/A	No	N/A	N/A	N/A
3,3′-Dithiodipropionic Acid						
No	N/A	N/A	No	N/A	N/A	N/A

FMOC reagent 10 ampoules 1ml ea for AAA	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
OPA reagent, 10 mg/ml, 6 ampoules	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
AA, std 10pmol 10/PK	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
AA, std 25pmol 10/PK	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
AA, standard 100PMOL 10/PK	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
td 1nmol 10/PK	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.
AA, standard 250PMOL 10/PK	This mixture does not contain any substances that are assessed to be a PBT or a vPvB.

SECTION 2: Hazards identification

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/information on ingredients

3.1 Substances :

Sarcosine	Mono-constituent substance
L-Trytophan	Mono-constituent substance
L-Norvaline	Mono-constituent substance
L-Glutamine	Mono-constituent substance
L-Asparagine	Mono-constituent substance
L-4-Hydroxyproline	Mono-constituent substance
3,3′-Dithiodipropionic Acid	Mono-constituent 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

Product/ingredient name	Identifiers	%	Classification	Type
Sarcosine Sarcosine	EC: 203-538-6 CAS: 107-97-1	100	Not classified.	[1]
L-Trytophan L-Tryptophan	EC: 200-795-6 CAS: 73-22-3	100	Not classified.	[1]
L-Norvaline Norvaline	EC: 229-543-3 CAS: 6600-40-4	100	Not classified.	[1]
L-Glutamine Levoglutamide	EC: 200-292-1 CAS: 56-85-9	100	Not classified.	[1]
L-Asparagine Asparagine	EC: 200-735-9 CAS: 70-47-3	100	Not classified.	[1]
L-4-Hydroxyproline L-4-Hydroxyproline	EC: 200-091-9 CAS: 51-35-4	100	Not classified.	[1]

SECTION 3: Composition/information on ingredients

3,3'-Dithiodipropionic Acid				
3,3'-dithiobispropionic acid	EC: 214-284-0 CAS: 1119-62-6	100	Skin Irrit. 2, H315 Eye Irrit. 2, H319 STOT SE 3, H335	[1]
FMOC reagent 10 ampoules 1ml ea for AAA				
acetonitrile	EC: 200-835-2 CAS: 75-05-8 Index: 608-001-00-3	≥90	Flam. Liq. 2, H225 Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Eye Irrit. 2, H319	[1] [2]
OPA reagent, 10 mg/ml, 6 ampoules				
potassium hydroxide	EC: 215-181-3 CAS: 1310-58-3 Index: 019-002-00-8	≤10	Acute Tox. 4, H302 Skin Corr. 1A, H314	[1] [2]
boric acid	EC: 233-139-2 CAS: 10043-35-3 Index: 005-007-00-2	≤5	Repr. 1B, H360FD	[1]
3-Mercaptopropionic acid	EC: 203-537-0 CAS: 107-96-0	≤3	Met. Corr. 1, H290 Acute Tox. 3, H301 Acute Tox. 4, H332 Skin Corr. 1B, H314	[1]
methanol	EC: 200-659-6 CAS: 67-56-1 Index: 603-001-00-X	<3	Flam. Liq. 2, H225 Acute Tox. 3, H301 Acute Tox. 3, H311 Acute Tox. 3, H331 STOT SE 1, H370	[1] [2]
Phthalaldehyde	EC: 211-402-2 CAS: 643-79-8	≤2.4	Acute Tox. 3, H301 Skin Corr. 1, H314 Skin Sens. 1A, H317 STOT SE 3, H335 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)	[1]
alkali salts and alkali earth salts of thiocyanic acid	EC: 206-370-1 CAS: 333-20-0 Index: 615-030-00-5	≤3	Acute Tox. 4, H302 Acute Tox. 4, H312 Acute Tox. 4, H332 Aquatic Chronic 3, H412	[1] [2]
Dodecan-1-ol, ethoxylated	EC: 500-002-6 CAS: 9002-92-0	≤0.8	Acute Tox. 4, H302 Skin Irrit. 2, H315 Eye Irrit. 2, H319 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 2, H411 **See Section 16 for the full text of the H statements declared above.**	[1]

There are no additional ingredients present which, within the current knowledge of the supplier, are classified and contribute to the classification of the substance and hence require reporting in this section.

Type

SECTION 3: Composition/information on ingredients

Sarcosine	[1] Constituent
L-Trytophan	[1] Constituent
L-Norvaline	[1] Constituent
L-Glutamine	[1] Constituent
L-Asparagine	[1] Constituent
L-4-Hydroxyproline	[1] Constituent
Dithiodiproprionic	[1] Substance classified with a health or environmental hazard
FMOC reagent 10 ampoules 1ml ea for AAA	[1] Substance classified with a health or environmental hazard [2] Substance with a workplace exposure limit
OPA reagent, 10 mg/ml, 6 ampoules	[1] Substance classified with a health or environmental hazard [2] Substance with a workplace exposure limit
AA, std 10pmol 10/PK	[1] Substance classified with a health or environmental hazard [2] Substance with a workplace exposure limit
AA, std 25pmol 10/PK	[1] Substance classified with a health or environmental hazard [2] Substance with a workplace exposure limit
AA, standard 100PMOL 10/PK	[1] Substance classified with a health or environmental hazard [2] Substance with a workplace exposure limit
td 1nmol 10/PK	[1] Substance classified with a health or environmental hazard [2] Substance with a workplace exposure limit
AA, standard 250PMOL 10/PK	[1] Substance classified with a health or environmental hazard [2] Substance with a workplace exposure limit

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

SECTION 4: First aid measures

4.1 Description of 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	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.
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.

SECTION 4: First aid measures

		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.
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	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband. In case of inhalation of decomposition

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			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	Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Get medical attention if adverse health effects persist or are severe. If necessary, call a poison center or physician. Wash clothing before reuse. Clean shoes thoroughly before reuse.
		OPA reagent, 10 mg/ml, 6 ampoules	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. In the event

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			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 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	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.

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		Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. If necessary, call a poison center or physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
	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.
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 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

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	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.

4.2 Most important symptoms and effects, both acute and delayed

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
FMOC reagent 10 ampoules 1ml ea for AAA	Adverse symptoms may include the following: pain or irritation 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.

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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	No specific data.
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.

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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	No specific data.
		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.

4.3 Indication of any immediate medical attention and special treatment needed

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 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.

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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.

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5.1 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.

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.

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td 1nmol 10/PK	None known.
AA, standard 250PMOL 10/PK	None known.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: 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 combustion 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 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:

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	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.

5.3 Advice for firefighters

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 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

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		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.
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.

SECTION 6: Accidental release measures

6.1 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.
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. Avoid breathing 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

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			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.
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".

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	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".
6.2 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).

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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 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).

6.3 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. The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Move containers from spill area. Absorb spillage to prevent material damage. Dispose of via a

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

6.4 Reference to other sections : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

SECTION 7: Handling and storage

7.1 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 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

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	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 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 ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Use only with adequate ventilation. Wear appropriate respirator when

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	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 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.

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		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 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

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	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.

7.2 Conditions for safe storage, including any incompatibilities

Storage	: 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

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	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 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. 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

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	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 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

SECTION 7: Handling and storage

appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Seveso Directive - Reporting thresholds

Danger criteria

Category	Notification and MAPP threshold	Safety report threshold
FMOC reagent 10 ampoules 1ml ea for AAA P5c	5000 tonne	50000 tonne
OPA reagent, 10 mg/ml, 6 ampoules E2	200 tonne	500 tonne

7.3 Specific end use(s)

Recommendations	:	Sarcosine	Industrial applications, Professional applications.
		L-Trytophan	Industrial applications, Professional applications.
		L-Norvaline	Industrial applications, Professional applications.
		L-Glutamine	Industrial applications, Professional applications.
		L-Asparagine	Industrial applications, Professional applications.
		L-4-Hydroxyproline	Industrial applications, Professional applications.
		3,3′-Dithiodipropionic Acid	Industrial applications, Professional applications.
		FMOC reagent 10 ampoules 1ml ea for AAA	Industrial applications, Professional applications.
		OPA reagent, 10 mg/ml, 6 ampoules	Industrial applications, Professional applications.
		AA, std 10pmol 10/PK	Industrial applications, Professional applications.
		AA, std 25pmol 10/PK	Industrial applications, Professional applications.
		AA, standard 100PMOL 10/PK	Industrial applications, Professional applications.
		td 1nmol 10/PK	Industrial applications, Professional applications.
		AA, standard 250PMOL 10/PK	Industrial applications, Professional applications.
Industrial sector specific solutions	:	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 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 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
FMOC reagent 10 ampoules 1ml ea for AAA	
acetonitrile	**EH40/2005 WELs (United Kingdom (UK), 1/2020).** STEL: 102 mg/m³ 15 minutes. STEL: 60 ppm 15 minutes. TWA: 40 ppm 8 hours. TWA: 68 mg/m³ 8 hours.
OPA reagent, 10 mg/ml, 6 ampoules	
potassium hydroxide	**EH40/2005 WELs (United Kingdom (UK), 1/2020).** STEL: 2 mg/m³ 15 minutes.
methanol	**EH40/2005 WELs (United Kingdom (UK), 1/2020). Absorbed through skin.** STEL: 333 mg/m³ 15 minutes. STEL: 250 ppm 15 minutes. TWA: 266 mg/m³ 8 hours. TWA: 200 ppm 8 hours.
alkali salts and alkali earth salts of thiocyanic acid	**EH40/2005 WELs (United Kingdom (UK), 1/2020). [cyanides, except HCN, cyanogen and cyanogen chloride as Cn] Absorbed through skin.** TWA: 5 mg/m³, (as CN) 8 hours.

Biological exposure indices

No exposure indices known.

Recommended monitoring procedures : Reference should be made to appropriate monitoring standards. Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

Product/ingredient name	Type	Exposure	Value	Population	Effects
L-Trytophan					
L-Tryptophan	DNEL	Long term Oral	47 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	164 mg/m³	General population	Systemic
	DNEL	Long term Dermal	471 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	664 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	941 mg/kg bw/day	Workers	Systemic
L-Glutamine					
Levoglutamide	DNEL	Long term Oral	9.8 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	34.2 mg/m³	General population	Systemic
	DNEL	Long term Dermal	98.3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	138.6 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	196.6 mg/kg bw/day	Workers	Systemic
L-Asparagine					
Asparagine	DNEL	Long term Oral	8.25 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	8.25 mg/	General	Systemic

SECTION 8: Exposure controls/personal protection

			kg bw/day	population	
	DNEL	Long term Inhalation	12.2 mg/m³	General population	Systemic
	DNEL	Long term Dermal	80.61 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	81.4 mg/m³	Workers	Systemic
L-4-Hydroxyproline					
L-4-Hydroxyproline	DNEL	Long term Inhalation	4.35 mg/m³	General population	Systemic
	DNEL	Long term Oral	5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	35.3 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	50 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	200 mg/kg bw/day	Workers	Systemic
FMOC reagent 10 ampoules 1ml ea for AAA					
acetonitrile	DNEL	Long term Oral	0.4 mg/kg bw/day	General population	Systemic
	DNEL	Short term Oral	0.6 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	1.2 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	2.4 mg/m³	General population	Systemic
OPA reagent, 10 mg/ml, 6 ampoules					
potassium hydroxide	DNEL	Long term Inhalation	1 mg/m³	General population	Local
	DNEL	Long term Inhalation	1 mg/m³	Workers	Local
boric acid	DNEL	Short term Oral	0.98 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	0.98 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	4.15 mg/m³	General population	Systemic
	DNEL	Long term Inhalation	8.3 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	196 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	392 mg/kg bw/day	Workers	Systemic
3-Mercaptopropionic acid	DNEL	Long term Dermal	0.59 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	2.08 mg/m³	Workers	Systemic
methanol	DNEL	Short term Oral	4 mg/kg bw/day	General population	Systemic
	DNEL	Long term Oral	4 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	4 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	4 mg/kg bw/day	General population	Systemic
	DNEL	Short term Dermal	20 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Dermal	20 mg/kg	Workers	Systemic

SECTION 8: Exposure controls/personal protection

			bw/day		
	DNEL	Short term Inhalation	26 mg/m³	General population	Local
	DNEL	Long term Inhalation	26 mg/m³	General population	Local
	DNEL	Short term Inhalation	26 mg/m³	General population	Systemic
	DNEL	Long term Inhalation	26 mg/m³	General population	Systemic
	DNEL	Short term Inhalation	130 mg/m³	Workers	Local
	DNEL	Long term Inhalation	130 mg/m³	Workers	Local
	DNEL	Short term Inhalation	130 mg/m³	Workers	Systemic
	DNEL	Long term Inhalation	130 mg/m³	Workers	Systemic
Phthalaldehyde	DNEL	Long term Oral	0.82 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.82 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	2.3 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	2.86 mg/m³	General population	Systemic
	DNEL	Long term Inhalation	16.1 mg/m³	Workers	Systemic
alkali salts and alkali earth salts of thiocyanic acid	DNEL	Long term Oral	0.3 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.9 mg/m³	General population	Systemic
	DNEL	Long term Dermal	2.6 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	3.6 mg/m³	Workers	Systemic
	DNEL	Long term Dermal	5.1 mg/kg bw/day	Workers	Systemic
Dodecan-1-ol, ethoxylated	DNEL	Long term Oral	0.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Dermal	0.5 mg/kg bw/day	General population	Systemic
	DNEL	Long term Inhalation	0.87 mg/m³	General population	Systemic
	DNEL	Long term Dermal	1.4 mg/kg bw/day	Workers	Systemic
	DNEL	Long term Inhalation	4.93 mg/m³	Workers	Systemic

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

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/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.

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.

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.

SECTION 9: Physical and chemical properties

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

9.1 Information on basic physical and chemical properties

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.

SECTION 9: Physical and chemical properties

		OPA reagent, 10 mg/ml, 6 ampoules	Yellow. [Light]
		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.
Melting point/freezing point	:	Sarcosine	208 to 212°C
		L-Trytophan	278.3 to 279.3°C [EU A.1]
		L-Norvaline	300°C
		L-Glutamine	Decomposes
		L-Asparagine	234 to 235°C
		L-4-Hydroxyproline	274°C
		3,3′-Dithiodipropionic Acid	155 to 158°C
		FMOC reagent 10 ampoules 1ml ea for AAA	-45°C
		OPA reagent, 10 mg/ml, 6 ampoules	Not available.
		AA, std 10pmol 10/PK	0°C
		AA, std 25pmol 10/PK	0°C
		AA, standard 100PMOL 10/PK	0°C

SECTION 9: Physical and chemical properties

		td 1nmol 10/PK	0°C
		AA, standard 250PMOL 10/PK	0°C
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
		OPA reagent, 10 mg/ml, 6 ampoules	Not available.
		AA, std 10pmol 10/PK	100°C
		AA, std 25pmol 10/PK	100°C
		AA, standard 100PMOL 10/PK	100°C
		td 1nmol 10/PK	100°C
		AA, standard 250PMOL 10/PK	100°C
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.
Upper/lower flammability or explosive limits	:	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.
		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

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
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.

Ingredient name	Closed cup °C	Closed cup Method	Open cup °C	Open cup Method
OPA reagent, 10 mg/ml, 6 ampoules				
methanol	9.7	Abel-Pensky	-	-
phthalaldehyde	>110	Setaflash	-	-

Auto-ignition temperature :

Sarcosine	Not applicable.
L-Trytophan	>400°C [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

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

Decomposition temperature :

Sarcosine	212°C
L-Trytophan	289°C
L-Norvaline	Not available.
L-Glutamine	185°C
L-Asparagine	Not available.
L-4-Hydroxyproline	275°C
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

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

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.

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	

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water	Soluble
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.

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	-

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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	-

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.

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.

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,	Not available.

SECTION 9: Physical and chemical properties

		6 ampoules	
		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.
Explosive properties	:	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 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.
Oxidising properties	:	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 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.

SECTION 9: Physical and chemical properties

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

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 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.
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.

10.2 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.

SECTION 10: Stability and reactivity

10.3 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.

10.4 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

SECTION 10: Stability and reactivity

		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.

10.5 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

SECTION 10: Stability and reactivity

	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
10.6 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.
	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

11.1 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

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	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	-
	LD50 Oral	Rat	5600 mg/kg	-
Phthalaldehyde	LD50 Dermal	Rat	>2000 mg/kg	-
	LD50 Oral	Rat	238.12 mg/kg	-
alkali salts and alkali earth salts of thiocyanic acid	LD50 Oral	Rat	854 mg/kg	-
Dodecan-1-ol, ethoxylated	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-
	LD50 Oral	Rat - Female	1000 mg/kg	-

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	13200.0	N/A	150.0	56.6
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
alkali salts and alkali earth salts of thiocyanic acid	854	1100	N/A	N/A	1.5
Dodecan-1-ol, ethoxylated	1000	N/A	N/A	N/A	N/A

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	-
Dodecan-1-ol, ethoxylated	Eyes - Severe irritant	Rabbit	-	24 hours 750 ug	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Moderate irritant	Rabbit	-	24 hours 500 mg	-

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Sensitiser

Conclusion/Summary : 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)

Product/ingredient 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.

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

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

SECTION 11: Toxicological information

		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	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.
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.
	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 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.

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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 irritation.
	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.

Symptoms related to the physical, chemical and toxicological characteristics

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.

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		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	No specific data.
		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.
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	No specific data.
		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.
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:

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	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 or irritation 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.

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

Conclusion/Summary : Not available.

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.

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		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.
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. May damage 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.

SECTION 11: Toxicological information

	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.
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.

SECTION 12: Ecological information

12.1 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 - Duckweed - *Lemna minor*	96 hours
	Acute LC50 3600000 µg/l Fresh water	Daphnia - Water flea - *Daphnia magna*	48 hours
	Acute LC50 1000000 µg/l Fresh water	Fish - Fathead minnow - *Pimephales promelas*	96 hours
	Chronic NOEC 1000000 µg/l Fresh water	Aquatic plants - Duckweed - *Lemna minor*	96 hours
	Chronic NOEC 160000 µg/l Fresh water	Daphnia - Water flea - *Daphnia magna*	21 days
OPA reagent, 10 mg/ml, 6 ampoules			
potassium hydroxide	Acute LC50 80 ppm Fresh water	Fish - Western mosquitofish - *Gambusia affinis* - Adult	96 hours
boric acid	Acute LC50 45.5 mg/l Fresh water	Crustaceans - Water flea - *Ceriodaphnia dubia*	48 hours
	Acute LC50 133000 µg/l Fresh water	Daphnia - Water flea - *Daphnia magna* - Neonate	48 hours

SECTION 12: Ecological information

	Acute LC50 75 mg/l Marine water	Fish - Red sea bream - *Pagrus major*	96 hours
	Chronic NOEC 6000 µg/l Fresh water	Daphnia - Water flea - *Daphnia magna*	21 days
	Chronic NOEC 2100 µg/l Fresh water	Fish - Rainbow trout,donaldson trout - *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 - Green algae - *Ulva pertusa*	96 hours
	Acute LC50 2500000 µg/l Marine water	Crustaceans - Common shrimp, sand shrimp - *Crangon crangon* - Adult	48 hours
	Acute LC50 3289 mg/l Fresh water	Daphnia - Water flea - *Daphnia magna* - Neonate	48 hours
	Acute LC50 290 mg/l Fresh water	Fish - Zebra danio - *Danio rerio* - Egg	96 hours
	Chronic NOEC 9.96 mg/l Marine water	Algae - Green algae - *Ulva pertusa*	96 hours
Phthalaldehyde	Acute EC50 90 ppb Fresh water	Daphnia - Water flea - *Daphnia magna*	48 hours
	Acute LC50 20 ppb Fresh water	Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss*	96 hours
alkali salts and alkali earth salts of thiocyanic acid	Acute LC50 11000 µg/l Fresh water	Daphnia - Water flea - *Daphnia pulex*	48 hours
	Acute LC50 13.3 mg/l Fresh water	Fish - Brook trout - *Salvelinus fontinalis*	96 hours
	Chronic NOEC 1100 µg/l Fresh water	Fish - Bluegill - *Lepomis macrochirus* - Juvenile (Fledgling, Hatchling, Weanling)	124 days
Dodecan-1-ol, ethoxylated	Acute LC50 6460 µg/l Fresh water	Daphnia - Water flea - *Daphnia magna*	48 hours
	Acute LC50 1500 µg/l Fresh water	Fish - Atlantic salmon - *Salmo salar* - Parr	96 hours

Conclusion/Summary : Not available.

12.2 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 -	96 % - Readily - 28 days	-	-

SECTION 12: Ecological information

	DOC Die-Away Test			

Conclusion/Summary : Not available.

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

12.3 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

SECTION 12: Ecological information

methanol	-0.77	<10	Low
Phthalaldehyde	0.99	-	Low
alkali salts and alkali earth salts of thiocyanic acid	-2.52	-	Low

12.4 Mobility in soil

Soil/water partition coefficient (K_{OC}) : Not available.

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

Product/ingredient name	PBT	P	B	T	vPvB	vP	vB
Sarcosine Sarcosine	N/A	N/A	N/A	N/A	N/A	N/A	N/A
L-Trytophan L-Tryptophan	No	N/A	N/A	No	N/A	N/A	N/A
L-Norvaline Norvaline	N/A	N/A	N/A	N/A	N/A	N/A	N/A
L-Glutamine Levoglutamide	No	N/A	N/A	No	N/A	N/A	N/A
L-Asparagine Asparagine	No	N/A	N/A	No	N/A	N/A	N/A
L-4-Hydroxyproline L-4-Hydroxyproline	No	N/A	N/A	No	N/A	N/A	N/A
3,3′-Dithiodipropionic Acid 3,3'-dithiobispropionic acid	No	N/A	N/A	No	N/A	N/A	N/A

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

SECTION 13: Disposal considerations

13.1 Waste treatment methods

Product

Methods of disposal : 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.

Hazardous waste : The classification of the product may meet the criteria for a hazardous waste.

Packaging

Methods of disposal : The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

Special precautions : 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

	ADR/RID	IMDG	IATA
14.1 UN number	UN3316	UN3316	UN3316
14.2 UN proper shipping name	CHEMICAL KIT	CHEMICAL KIT	Chemical kit
14.3 Transport hazard class(es)	9 	9 	9 
14.4 Packing group	II	II	II
14.5 Environmental hazards	No.	No.	No.

Additional information

Remarks: De minimis quantities

ADR/RID : **Hazard identification number** 90
Limited quantity See SP 251
Special provisions 251, 340, 671
Tunnel code (E)

IMDG : **Emergency schedules** F-A, _S-P_
Special provisions 251, 340

IATA : **Quantity limitation** Passenger and Cargo Aircraft: 10 kg. Packaging instructions: 960. Cargo Aircraft Only: 10 kg. Packaging instructions: 960. Limited Quantities - Passenger Aircraft: 1 kg. Packaging instructions: Y960.
Special provisions A44, A163

14.6 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.

14.7 Transport in bulk according to IMO instruments : Not available.

SECTION 15: Regulatory information

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

UK (GB)/REACH

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

Intrinsic property	Ingredient name	Status	Reference number	Date of revision
OPA reagent, 10 mg/ml, 6 ampoules Toxic to reproduction	boric acid	Candidate	-	6/18/2010

Ozone depleting substances

Not listed.

Prior Informed Consent (PIC)

SECTION 15: Regulatory information

Not listed.

Persistent Organic Pollutants

Not listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles

Product / Ingredient name	Identifiers	Status
FMOC reagent 10 ampoules 1ml ea for AAA		
FMOC reagent 10 ampoules 1ml ea for AAA	-	3
OPA reagent, 10 mg/ml, 6 ampoules		
OPA reagent, 10 mg/ml, 6 ampoules	-	3 30
boric acid	EC: 233-139-2 CAS: 10043-35-3 Index: 005-007-00-2	30
methanol	EC: 200-659-6 CAS: 67-56-1 Index: 603-001-00-X	69

Label :

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	Restricted to professional users.
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.

Seveso Directive

This product is not controlled under the Seveso Directive.

Danger criteria

Category
FMOC reagent 10 ampoules 1ml ea for AAA P5c **OPA reagent, 10 mg/ml, 6 ampoules** E2

EU regulations

Industrial emissions (integrated pollution prevention and control) - Air : Listed

Industrial emissions (integrated pollution prevention and control) - Water : Listed

15.2 Chemical safety assessment : This product contains substances for which Chemical Safety Assessments might still be required.

SECTION 15: Regulatory information

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

United States : Not determined.

SECTION 16: Other information

Indicates information that has changed from previously issued version.

Abbreviations and acronyms : ATE = Acute Toxicity Estimate
CLP = Classification, Labelling and Packaging Regulation [Regulation (EC) No. 1272/2008]
DMEL = Derived Minimal Effect Level
DNEL = Derived No Effect Level
EUH statement = CLP-specific Hazard statement
N/A = Not available
PBT = Persistent, Bioaccumulative and Toxic
PNEC = Predicted No Effect Concentration
RRN = REACH Registration Number
vPvB = Very Persistent and Very Bioaccumulative

Procedure used to derive the classification

Classification	Justification
3,3′-Dithiodipropionic Acid	
Skin Irrit. 2, H315	Expert judgment
Eye Irrit. 2, H319	Expert judgment
STOT SE 3, H335	Expert judgment
FMOC reagent 10 ampoules 1ml ea for AAA	
Flam. Liq. 2, H225	On basis of test data
Acute Tox. 4, H302	Calculation method
Acute Tox. 4, H312	Calculation method
Acute Tox. 4, H332	Calculation method
Eye Irrit. 2, H319	Calculation method
OPA reagent, 10 mg/ml, 6 ampoules	
Met. Corr. 1, H290	Expert judgment
Acute Tox. 4, H302	Calculation method
Skin Corr. 1A, H314	Calculation method
Skin Sens. 1, H317	Calculation method
Repr. 1B, H360FD	Calculation method
Aquatic Chronic 2, H411	Calculation method
AA, std 10pmol 10/PK	
Met. Corr. 1, H290	Expert judgment
AA, std 25pmol 10/PK	
Met. Corr. 1, H290	Expert judgment

SECTION 16: Other information

AA, standard 100PMOL 10/PK	
Met. Corr. 1, H290	Expert judgment
td 1nmol 10/PK	
Met. Corr. 1, H290	Expert judgment
AA, standard 250PMOL 10/PK	
Met. Corr. 1, H290	Expert judgment

Full text of abbreviated H statements

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	Harmful if swallowed.
H312	Harmful in contact with skin.
H319	Causes serious eye irritation.
H332	Harmful if inhaled.

OPA reagent, 10 mg/ml, 6 ampoules

H225	Highly flammable liquid and vapour.
H290	May be corrosive to metals.
H301	Toxic if swallowed.
H302	Harmful if swallowed.
H311	Toxic in contact with skin.
H312	Harmful in contact with skin.
H314	Causes severe skin burns and eye damage.
H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H331	Toxic if inhaled.
H332	Harmful if inhaled.
H335	May cause respiratory irritation.
H360FD	May damage fertility. May damage the unborn child.
H370	Causes damage to organs.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
H411	Toxic to aquatic life with long lasting effects.
H412	Harmful 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

SECTION 16: Other information

H290	May be corrosive to metals.

AA, standard 250PMOL 10/PK

H290	May be corrosive to metals.

Full text of classifications

3,3'-Dithiodipropionic Acid

Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

FMOC reagent 10 ampoules 1ml ea for AAA

Acute Tox. 4	ACUTE TOXICITY - Category 4
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2

OPA reagent, 10 mg/ml, 6 ampoules

Acute Tox. 3	ACUTE TOXICITY - Category 3
Acute Tox. 4	ACUTE TOXICITY - Category 4
Aquatic Acute 1	SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
Aquatic Chronic 1	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1
Aquatic Chronic 2	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2
Aquatic Chronic 3	LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3
Eye Irrit. 2	SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2
Flam. Liq. 2	FLAMMABLE LIQUIDS - Category 2
Met. Corr. 1	CORROSIVE TO METALS - Category 1
Repr. 1B	REPRODUCTIVE TOXICITY - Category 1B
Skin Corr. 1	SKIN CORROSION/IRRITATION - Category 1
Skin Corr. 1A	SKIN CORROSION/IRRITATION - Category 1A
Skin Corr. 1B	SKIN CORROSION/IRRITATION - Category 1B
Skin Irrit. 2	SKIN CORROSION/IRRITATION - Category 2
Skin Sens. 1	SKIN SENSITISATION - Category 1
Skin Sens. 1A	SKIN SENSITISATION - Category 1A
STOT SE 1	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 1
STOT SE 3	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE - Category 3

AA, std 10pmol 10/PK

Met. Corr. 1	CORROSIVE TO METALS - Category 1

AA, std 25pmol 10/PK

Met. Corr. 1	CORROSIVE TO METALS - Category 1

AA, standard 100PMOL 10/PK

Met. Corr. 1	CORROSIVE TO METALS - Category 1

td 1nmol 10/PK

Met. Corr. 1	CORROSIVE TO METALS - Category 1

AA, standard 250PMOL 10/PK

Met. Corr. 1	CORROSIVE TO METALS - Category 1

SECTION 16: Other information

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