

SAFETY DATA SHEET



EN12916:2006 IP391-07 Cal. Solns A-D, Part Number 5190-0484

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

1.1 Product identifier

Product name : EN12916:2006 IP391-07 Cal. Solns A-D, Part Number 5190-0484
Part No. (Kit) : 5190-0484
Part No. : EN12916:2006 IP391-07 5190-0484-A
Cal. Soln A
EN12916:2006 IP391-07 5190-0484-B
Cal. Soln B
EN12916:2006 IP391-07 5190-0484-C
Cal. Soln C
EN12916:2006 IP391-07 5190-0484-D
Cal. Soln D

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

Identified uses	
Analytical chemistry.	
EN12916:2006 IP391-07 Cal. Soln A	1 x 1ml
EN12916:2006 IP391-07 Cal. Soln B	1 x 1ml
EN12916:2006 IP391-07 Cal. Soln C	1 x 1ml
EN12916:2006 IP391-07 Cal. Soln D	1 x 1ml

1.3 Details of the supplier of the safety data sheet

Agilent Technologies Manufacturing GmbH & Co. KG
Hewlett-Packard-Str. 8
76337 Waldbronn
Germany
0800 603 1000

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 : EN12916:2006 IP391-07 Mixture
Cal. Soln A
EN12916:2006 IP391-07 Mixture
Cal. Soln B
EN12916:2006 IP391-07 Mixture
Cal. Soln C
EN12916:2006 IP391-07 Mixture
Cal. Soln D

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

SECTION 2: Hazards identification

EN12916:2006 IP391-07 Cal.

Soln A

H225	FLAMMABLE LIQUIDS - Category 2
H315	SKIN CORROSION/IRRITATION - Category 2
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304	ASPIRATION HAZARD - Category 1
H400	ACUTE AQUATIC HAZARD - Category 1
H410	LONG-TERM AQUATIC HAZARD - Category 1

EN12916:2006 IP391-07 Cal.

Soln B

H225	FLAMMABLE LIQUIDS - Category 2
H315	SKIN CORROSION/IRRITATION - Category 2
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304	ASPIRATION HAZARD - Category 1
H400	ACUTE AQUATIC HAZARD - Category 1
H410	LONG-TERM AQUATIC HAZARD - Category 1

EN12916:2006 IP391-07 Cal.

Soln C

H225	FLAMMABLE LIQUIDS - Category 2
H315	SKIN CORROSION/IRRITATION - Category 2
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304	ASPIRATION HAZARD - Category 1
H400	ACUTE AQUATIC HAZARD - Category 1
H410	LONG-TERM AQUATIC HAZARD - Category 1

EN12916:2006 IP391-07 Cal.

Soln D

H225	FLAMMABLE LIQUIDS - Category 2
H315	SKIN CORROSION/IRRITATION - Category 2
H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
H304	ASPIRATION HAZARD - Category 1
H400	ACUTE AQUATIC HAZARD - Category 1
H410	LONG-TERM AQUATIC HAZARD - Category 1

Ingredients of unknown toxicity	EN12916:2006 IP391-07 Cal. Soln A	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 2.7%
	EN12916:2006 IP391-07 Cal. Soln B	Percentage of the mixture consisting of ingredient(s) of unknown toxicity: 1.4%
	EN12916:2006 IP391-07 Cal. Soln C	Not applicable.
	EN12916:2006 IP391-07 Cal. Soln D	Not applicable.

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.

2.2 Label elements

Hazard pictograms



SECTION 2: Hazards identification

Signal word	:	EN12916:2006 IP391-07 Cal. Soln A	Danger
		EN12916:2006 IP391-07 Cal. Soln B	Danger
		EN12916:2006 IP391-07 Cal. Soln C	Danger
		EN12916:2006 IP391-07 Cal. Soln D	Danger
Hazard statements	:	EN12916:2006 IP391-07 Cal. Soln A	GHS02 - Highly flammable liquid and vapour. GHS07 - Causes skin irritation. May cause drowsiness or dizziness. GHS08 - May be fatal if swallowed and enters airways. GHS09 - Very toxic to aquatic life with long lasting effects.
		EN12916:2006 IP391-07 Cal. Soln B	GHS02 - Highly flammable liquid and vapour. GHS07 - Causes skin irritation. May cause drowsiness or dizziness. GHS08 - May be fatal if swallowed and enters airways. GHS09 - Very toxic to aquatic life with long lasting effects.
		EN12916:2006 IP391-07 Cal. Soln C	GHS02 - Highly flammable liquid and vapour. GHS07 - Causes skin irritation. May cause drowsiness or dizziness. GHS08 - May be fatal if swallowed and enters airways. GHS09 - Very toxic to aquatic life with long lasting effects.
		EN12916:2006 IP391-07 Cal. Soln D	GHS02 - Highly flammable liquid and vapour. GHS07 - Causes skin irritation. May cause drowsiness or dizziness. GHS08 - May be fatal if swallowed and enters airways. GHS09 - Very toxic to aquatic life with long lasting effects.
Precautionary statements			
Prevention	:	EN12916:2006 IP391-07 Cal. Soln A	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P273 - Avoid release to the environment.
		EN12916:2006 IP391-07 Cal. Soln B	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P273 - Avoid release to the environment.

SECTION 2: Hazards identification

	EN12916:2006 IP391-07 Cal. Soln C	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P273 - Avoid release to the environment.
	EN12916:2006 IP391-07 Cal. Soln D	P280 - Wear protective gloves. Wear eye or face protection. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P241 - Use explosion-proof electrical, ventilating, lighting and all material-handling equipment. P273 - Avoid release to the environment.
Response	: EN12916:2006 IP391-07 Cal. Soln A	P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	EN12916:2006 IP391-07 Cal. Soln B	P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	EN12916:2006 IP391-07 Cal. Soln C	P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
	EN12916:2006 IP391-07 Cal. Soln D	P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. P301 + P310 + P331 - IF SWALLOWED: Immediately call a POISON CENTER or physician. Do NOT induce vomiting. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
Storage	: EN12916:2006 IP391-07 Cal. Soln A	P235 - Keep cool.
	EN12916:2006 IP391-07 Cal. Soln B	P235 - Keep cool.
	EN12916:2006 IP391-07 Cal. Soln C	P235 - Keep cool.
	EN12916:2006 IP391-07 Cal. Soln D	P235 - Keep cool.
Disposal	: EN12916:2006 IP391-07 Cal. Soln A	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	EN12916:2006 IP391-07 Cal. Soln B	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	EN12916:2006 IP391-07 Cal. Soln C	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
	EN12916:2006 IP391-07 Cal. Soln D	P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

SECTION 2: Hazards identification

Hazardous ingredients	: EN12916:2006 IP391-07 Cal. Soln A n-Heptane
	EN12916:2006 IP391-07 Cal. Soln B n-Heptane
	EN12916:2006 IP391-07 Cal. Soln C n-Heptane
	EN12916:2006 IP391-07 Cal. Soln D n-Heptane
Supplemental label elements	: EN12916:2006 IP391-07 Cal. Soln A Not applicable. EN12916:2006 IP391-07 Cal. Soln B Not applicable. EN12916:2006 IP391-07 Cal. Soln C Not applicable. EN12916:2006 IP391-07 Cal. Soln D Not applicable.
Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	: EN12916:2006 IP391-07 Cal. Soln A Not applicable. EN12916:2006 IP391-07 Cal. Soln B Not applicable. EN12916:2006 IP391-07 Cal. Soln C Not applicable. EN12916:2006 IP391-07 Cal. Soln D Not applicable.
Special packaging requirements	
Tactile warning of danger	: EN12916:2006 IP391-07 Cal. Soln A Not applicable. EN12916:2006 IP391-07 Cal. Soln B Not applicable. EN12916:2006 IP391-07 Cal. Soln C Not applicable. EN12916:2006 IP391-07 Cal. Soln D Not applicable.

2.3 Other hazards

Other hazards which do not result in classification	: EN12916:2006 IP391-07 Cal. Soln A None known. EN12916:2006 IP391-07 Cal. Soln B None known. EN12916:2006 IP391-07 Cal. Soln C None known. EN12916:2006 IP391-07 Cal. Soln D None known.
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SECTION 3: Composition/information on ingredients

3.2 Mixtures	: EN12916:2006 IP391-07 Cal. Soln A Mixture EN12916:2006 IP391-07 Cal. Soln B Mixture EN12916:2006 IP391-07 Cal. Soln C Mixture EN12916:2006 IP391-07 Cal. Soln D Mixture
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SECTION 3: Composition/information on ingredients

Product/ingredient name	Identifiers	%	Classification	Type
EN12916:2006 IP391-07 Cal. Soln A				
n-Heptane	EC: 205-563-8 CAS: 142-82-5 Index: 601-008-00-2	≥90	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1] [2]
o-xylene	EC: 202-422-2 CAS: 95-47-6 Index: 601-022-00-9	≤10	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315	[1] [2]
Fluorene	EC: 201-695-5 CAS: 86-73-7	≤3	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 2, H411	[1]
Phenanthrene	EC: 201-581-5 CAS: 85-01-8	<1	Acute Tox. 4, H302 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)	[1]
EN12916:2006 IP391-07 Cal. Soln B				
n-Heptane	EC: 205-563-8 CAS: 142-82-5 Index: 601-008-00-2	≥90	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1] [2]
o-xylene	EC: 202-422-2 CAS: 95-47-6 Index: 601-022-00-9	≤3	Flam. Liq. 3, H226 Acute Tox. 4, H312 Acute Tox. 4, H332 Skin Irrit. 2, H315	[1] [2]
Fluorene	EC: 201-695-5 CAS: 86-73-7	≤3	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 2, H411	[1]
Phenanthrene	EC: 201-581-5 CAS: 85-01-8	≤0.3	Acute Tox. 4, H302 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)	[1]
EN12916:2006 IP391-07 Cal. Soln C				
n-Heptane	EC: 205-563-8 CAS: 142-82-5 Index: 601-008-00-2	≥90	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1] [2]
Fluorene	EC: 201-695-5 CAS: 86-73-7	<1	Aquatic Acute 1, H400 (M=1) Aquatic Chronic 2, H411	[1]
Phenanthrene	EC: 201-581-5 CAS: 85-01-8	≤0.1	Acute Tox. 4, H302 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)	[1]
EN12916:2006 IP391-07 Cal. Soln D				
n-Heptane	EC: 205-563-8 CAS: 142-82-5 Index: 601-008-00-2	≥90	Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 (M=1) Aquatic Chronic 1, H410 (M=1)	[1] [2]
Phenanthrene	EC: 201-581-5 CAS: 85-01-8	≤0.1	Acute Tox. 4, H302 Aquatic Acute 1, H400 (M=10) Aquatic Chronic 1, H410 (M=10)	[1]

SECTION 3: Composition/information on ingredients

			See Section 16 for the full text of the H statements declared above.	
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There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Type

- [1] Substance classified with a health or environmental hazard
- [2] Substance with a workplace exposure limit
- [3] Substance meets the criteria for PBT according to Regulation (EC) No. 1907/2006, Annex XIII
- [4] Substance meets the criteria for vPvB according to Regulation (EC) No. 1907/2006, Annex XIII
- [5] Substance of equivalent concern

SECTION 4: First aid measures

4.1 Description of first aid measures

Eye contact	: EN12916:2006 IP391-07 Cal. Soln A	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.
	EN12916:2006 IP391-07 Cal. Soln B	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.
	EN12916:2006 IP391-07 Cal. Soln C	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.
	EN12916:2006 IP391-07 Cal. Soln D	Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
Inhalation	: EN12916:2006 IP391-07 Cal. Soln A	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.
	EN12916:2006 IP391-07 Cal. Soln B	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.
	EN12916:2006 IP391-07 Cal. Soln C	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-

SECTION 4: First aid measures

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.

EN12916:2006 IP391-07
Cal. Soln D
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.

Skin contact

: EN12916:2006 IP391-07
Cal. Soln A
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.

EN12916:2006 IP391-07
Cal. Soln B
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.

EN12916:2006 IP391-07
Cal. Soln C
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.

EN12916:2006 IP391-07
Cal. Soln D
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.

Ingestion

: EN12916:2006 IP391-07
Cal. Soln A
Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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.

EN12916:2006 IP391-07
Cal. Soln B
Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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.

EN12916:2006 IP391-07
Cal. Soln C
Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a

SECTION 4: First aid measures

position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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.

EN12916:2006 IP391-07
Cal. Soln D

Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. 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.

Protection of first-aiders : EN12916:2006 IP391-07
Cal. Soln A

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.

EN12916:2006 IP391-07
Cal. Soln B

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.

EN12916:2006 IP391-07
Cal. Soln C

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.

EN12916:2006 IP391-07
Cal. Soln D

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.

4.2 Most important symptoms and effects, both acute and delayed

Potential acute health effects

- Eye contact** : EN12916:2006 IP391-07 Cal. Soln A No known significant effects or critical hazards.
- EN12916:2006 IP391-07 Cal. Soln B No known significant effects or critical hazards.
- EN12916:2006 IP391-07 Cal. Soln C No known significant effects or critical hazards.
- EN12916:2006 IP391-07 Cal. Soln D No known significant effects or critical hazards.

SECTION 4: First aid measures

Inhalation : EN12916:2006 IP391-07 Cal. Soln A Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
 EN12916:2006 IP391-07 Cal. Soln B Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
 EN12916:2006 IP391-07 Cal. Soln C Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
 EN12916:2006 IP391-07 Cal. Soln D Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : EN12916:2006 IP391-07 Cal. Soln A Causes skin irritation.
 EN12916:2006 IP391-07 Cal. Soln B Causes skin irritation.
 EN12916:2006 IP391-07 Cal. Soln C Causes skin irritation.
 EN12916:2006 IP391-07 Cal. Soln D Causes skin irritation.

Ingestion : EN12916:2006 IP391-07 Cal. Soln A Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
 EN12916:2006 IP391-07 Cal. Soln B Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
 EN12916:2006 IP391-07 Cal. Soln C Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
 EN12916:2006 IP391-07 Cal. Soln D Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

Eye contact : EN12916:2006 IP391-07 Cal. Soln A Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
 EN12916:2006 IP391-07 Cal. Soln B Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
 EN12916:2006 IP391-07 Cal. Soln C Adverse symptoms may include the following:
 pain or irritation
 watering
 redness
 EN12916:2006 IP391-07 Cal. Soln D Adverse symptoms may include the following:
 pain or irritation
 watering
 redness

Inhalation : EN12916:2006 IP391-07 Cal. Soln A Adverse symptoms may include the following:
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
 EN12916:2006 IP391-07 Cal. Soln B Adverse symptoms may include the following:
 nausea or vomiting
 headache
 drowsiness/fatigue
 dizziness/vertigo
 unconsciousness
 EN12916:2006 IP391-07 Cal. Soln C Adverse symptoms may include the following:
 nausea or vomiting

SECTION 4: First aid measures

headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

EN12916:2006 IP391-07 Cal. Soln D Adverse symptoms may include the following:

nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : EN12916:2006 IP391-07 Cal. Soln A Adverse symptoms may include the following:

irritation
redness
EN12916:2006 IP391-07 Cal. Soln B Adverse symptoms may include the following:

irritation
redness
EN12916:2006 IP391-07 Cal. Soln C Adverse symptoms may include the following:

irritation
redness
EN12916:2006 IP391-07 Cal. Soln D Adverse symptoms may include the following:

Ingestion : EN12916:2006 IP391-07 Cal. Soln A Adverse symptoms may include the following:

nausea or vomiting
EN12916:2006 IP391-07 Cal. Soln B Adverse symptoms may include the following:

nausea or vomiting
EN12916:2006 IP391-07 Cal. Soln C Adverse symptoms may include the following:

nausea or vomiting
EN12916:2006 IP391-07 Cal. Soln D Adverse symptoms may include the following:
nausea or vomiting

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician : EN12916:2006 IP391-07 Cal. Soln A Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
EN12916:2006 IP391-07 Cal. Soln B Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
EN12916:2006 IP391-07 Cal. Soln C Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
EN12916:2006 IP391-07 Cal. Soln D Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

Specific treatments : EN12916:2006 IP391-07 Cal. Soln A No specific treatment.
EN12916:2006 IP391-07 Cal. Soln B No specific treatment.
EN12916:2006 IP391-07 Cal. Soln C No specific treatment.
EN12916:2006 IP391-07 Cal. Soln D No specific treatment.

SECTION 5: Firefighting measures**5.1 Extinguishing media**

Suitable extinguishing media	: EN12916:2006 IP391-07 Cal. Soln A	Use dry chemical, CO ₂ , water spray (fog) or foam.
	: EN12916:2006 IP391-07 Cal. Soln B	Use dry chemical, CO ₂ , water spray (fog) or foam.
	: EN12916:2006 IP391-07 Cal. Soln C	Use dry chemical, CO ₂ , water spray (fog) or foam.
	: EN12916:2006 IP391-07 Cal. Soln D	Use dry chemical, CO ₂ , water spray (fog) or foam.
Unsuitable extinguishing media	: EN12916:2006 IP391-07 Cal. Soln A	Do not use water jet.
	: EN12916:2006 IP391-07 Cal. Soln B	Do not use water jet.
	: EN12916:2006 IP391-07 Cal. Soln C	Do not use water jet.
	: EN12916:2006 IP391-07 Cal. Soln D	Do not use water jet.

5.2 Special hazards arising from the substance or mixture

Hazards from the substance or mixture	: EN12916:2006 IP391-07 Cal. Soln A	Highly flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is very 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.
	: EN12916:2006 IP391-07 Cal. Soln B	Highly flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is very 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.
	: EN12916:2006 IP391-07 Cal. Soln C	Highly flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is very 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.
	: EN12916:2006 IP391-07 Cal. Soln D	Highly flammable liquid and vapour. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. The vapour/gas is heavier than air and will spread along the ground. Vapours may accumulate in low or confined areas or travel a considerable distance to a source of ignition and flash back. Runoff to sewer may create fire or explosion hazard. This material is very 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.

SECTION 5: Firefighting measures

Hazardous combustion products	: EN12916:2006 IP391-07 Cal. Soln A	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	EN12916:2006 IP391-07 Cal. Soln B	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	EN12916:2006 IP391-07 Cal. Soln C	Decomposition products may include the following materials: carbon dioxide carbon monoxide
	EN12916:2006 IP391-07 Cal. Soln D	Decomposition products may include the following materials: carbon dioxide carbon monoxide

5.3 Advice for firefighters

Special precautions for fire-fighters	: EN12916:2006 IP391-07 Cal. Soln A	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.
	EN12916:2006 IP391-07 Cal. Soln B	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.
	EN12916:2006 IP391-07 Cal. Soln C	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.
	EN12916:2006 IP391-07 Cal. Soln D	Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters	: EN12916:2006 IP391-07 Cal. Soln A	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	EN12916:2006 IP391-07 Cal. Soln B	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	EN12916:2006 IP391-07 Cal. Soln C	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.
	EN12916:2006 IP391-07 Cal. Soln D	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode. Clothing for fire-fighters (including helmets, protective boots and gloves) conforming to European standard EN 469 will provide a basic level of protection for chemical incidents.

SECTION 6: Accidental release measures**6.1 Personal precautions, protective equipment and emergency procedures**

For non-emergency personnel	:	EN12916:2006 IP391-07 Cal. Soln A	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.
		EN12916:2006 IP391-07 Cal. Soln B	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.
		EN12916:2006 IP391-07 Cal. Soln C	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.
		EN12916:2006 IP391-07 Cal. Soln D	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Avoid breathing vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders	:	EN12916:2006 IP391-07 Cal. Soln A	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".
		EN12916:2006 IP391-07 Cal. Soln B	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".
		EN12916:2006 IP391-07 Cal. Soln C	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".
		EN12916:2006 IP391-07 Cal. Soln D	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	:	EN12916:2006 IP391-07 Cal. Soln A	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.
		EN12916:2006 IP391-07 Cal. Soln B	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

SECTION 6: Accidental release measures

	(sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.
EN12916:2006 IP391-07 Cal. Soln C	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.
EN12916:2006 IP391-07 Cal. Soln D	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.

6.3 Methods and material for containment and cleaning up

Methods for cleaning up	:	EN12916:2006 IP391-07 Cal. Soln A	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.
		EN12916:2006 IP391-07 Cal. Soln B	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.
		EN12916:2006 IP391-07 Cal. Soln C	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.
		EN12916:2006 IP391-07 Cal. Soln D	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.

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	:	EN12916:2006 IP391-07 Cal. Soln A	Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be
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SECTION 7: Handling and storage

EN12916:2006 IP391-07 Cal. Soln B	hazardous. Do not reuse container. Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
EN12916:2006 IP391-07 Cal. Soln C	Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
EN12916:2006 IP391-07 Cal. Soln D	Put on appropriate personal protective equipment (see Section 8). Do not swallow. Avoid contact with eyes, skin and clothing. Avoid breathing vapour or mist. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene : EN12916:2006 IP391-07 Cal. Soln A	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.
EN12916:2006 IP391-07 Cal. Soln B	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.
EN12916:2006 IP391-07 Cal. Soln C	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

SECTION 7: Handling and storage

EN12916:2006 IP391-07
Cal. Soln D

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

: EN12916:2006 IP391-07
Cal. Soln A

Store between the following temperatures: 18 to 25°C (64.4 to 77°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

EN12916:2006 IP391-07
Cal. Soln B

Store between the following temperatures: 18 to 25°C (64.4 to 77°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

EN12916:2006 IP391-07
Cal. Soln C

Store between the following temperatures: 18 to 25°C (64.4 to 77°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

EN12916:2006 IP391-07
Cal. Soln D

Store between the following temperatures: 18 to 25°C (64.4 to 77°F). Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabelled containers. Use appropriate containment to avoid environmental contamination.

Danger criteria

SECTION 7: Handling and storage

Category	Notification and MAPP threshold	Safety report threshold
EN12916:2006 IP391-07 Cal. Soln A P5c: Flammable liquids 2 and 3 not falling under P5a or P5b E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1	5000 100	50000 200
EN12916:2006 IP391-07 Cal. Soln B P5c: Flammable liquids 2 and 3 not falling under P5a or P5b E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1	5000 100	50000 200
EN12916:2006 IP391-07 Cal. Soln C P5c: Flammable liquids 2 and 3 not falling under P5a or P5b E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1	5000 100	50000 200
EN12916:2006 IP391-07 Cal. Soln D P5c: Flammable liquids 2 and 3 not falling under P5a or P5b E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1	5000 100	50000 200

7.3 Specific end use(s)

Recommendations	:	EN12916:2006 IP391-07 Cal. Soln A	Industrial applications, Professional applications.
	:	EN12916:2006 IP391-07 Cal. Soln B	Industrial applications, Professional applications.
	:	EN12916:2006 IP391-07 Cal. Soln C	Industrial applications, Professional applications.
	:	EN12916:2006 IP391-07 Cal. Soln D	Industrial applications, Professional applications.
Industrial sector specific solutions	:	EN12916:2006 IP391-07 Cal. Soln A	Not applicable.
	:	EN12916:2006 IP391-07 Cal. Soln B	Not applicable.
	:	EN12916:2006 IP391-07 Cal. Soln C	Not applicable.
	:	EN12916:2006 IP391-07 Cal. Soln D	Not applicable.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational exposure limits

Product/ingredient name	Exposure limit values
EN12916:2006 IP391-07 Cal. Soln A n-Heptane o-xylene	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 500 ppm 8 hours. EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin. STEL: 441 mg/m ³ 15 minutes. TWA: 50 ppm 8 hours. TWA: 220 mg/m ³ 8 hours. STEL: 100 ppm 15 minutes.
EN12916:2006 IP391-07 Cal. Soln B n-Heptane o-xylene	EH40/2005 WELs (United Kingdom (UK), 12/2011). TWA: 500 ppm 8 hours. EH40/2005 WELs (United Kingdom (UK), 12/2011). Absorbed through skin.

SECTION 8: Exposure controls/personal protection

EN12916:2006 IP391-07 Cal. Soln C
n-Heptane

STEL: 441 mg/m³ 15 minutes.
TWA: 50 ppm 8 hours.
TWA: 220 mg/m³ 8 hours.
STEL: 100 ppm 15 minutes.

EH40/2005 WELs (United Kingdom (UK), 12/2011).
TWA: 500 ppm 8 hours.

EN12916:2006 IP391-07 Cal. Soln D
n-Heptane

EH40/2005 WELs (United Kingdom (UK), 12/2011).
TWA: 500 ppm 8 hours.

Recommended monitoring procedures

: If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment. Reference should be made to monitoring standards, such as the following: European Standard EN 689 (Workplace atmospheres - Guidance for the assessment of exposure by inhalation to chemical agents for comparison with limit values and measurement strategy) European Standard EN 14042 (Workplace atmospheres - Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents) European Standard EN 482 (Workplace atmospheres - General requirements for the performance of procedures for the measurement of chemical agents) Reference to national guidance documents for methods for the determination of hazardous substances will also be required.

DNELs/DMELs

No DNELs/DMELs available.

PNECs

No PNECs available

8.2 Exposure controls

Appropriate engineering controls

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

Individual protection measures

Hygiene measures

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

Eye/face protection

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

Skin protection

Hand protection

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

SECTION 8: Exposure controls/personal protection

- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves. Refer to European Standard EN 1149 for further information on material and design requirements and test methods.
- 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**9.1 Information on basic physical and chemical properties****Appearance**

- Physical state** : EN12916:2006 Liquid.
IP391-07 Cal. Soln A
EN12916:2006 Liquid.
IP391-07 Cal. Soln B
EN12916:2006 Liquid.
IP391-07 Cal. Soln C
EN12916:2006 Liquid.
IP391-07 Cal. Soln D
- Colour** : EN12916:2006 Colourless.
IP391-07 Cal. Soln A
EN12916:2006 Colourless.
IP391-07 Cal. Soln B
EN12916:2006 Colourless.
IP391-07 Cal. Soln C
EN12916:2006 Colourless.
IP391-07 Cal. Soln D
- Odour** : EN12916:2006 Not available.
IP391-07 Cal. Soln A
EN12916:2006 Not available.
IP391-07 Cal. Soln B
EN12916:2006 Not available.
IP391-07 Cal. Soln C
EN12916:2006 Not available.
IP391-07 Cal. Soln D
- Odour threshold** : EN12916:2006 Not available.
IP391-07 Cal. Soln A
EN12916:2006 Not available.
IP391-07 Cal. Soln B
EN12916:2006 Not available.
IP391-07 Cal. Soln C
EN12916:2006 Not available.
IP391-07 Cal. Soln D
- pH** : EN12916:2006 Not available.
IP391-07 Cal. Soln A
EN12916:2006 Not available.
IP391-07 Cal. Soln B
EN12916:2006 Not available.
IP391-07 Cal. Soln C
EN12916:2006 Not available.
IP391-07 Cal. Soln D

SECTION 9: Physical and chemical properties

Melting point/freezing point	: EN12916:2006	-91°C
	IP391-07 Cal. Soln A	
	EN12916:2006	-91°C
	IP391-07 Cal. Soln B	
	EN12916:2006	-91°C
Initial boiling point and boiling range	IP391-07 Cal. Soln C	-91°C
	EN12916:2006	-91°C
	IP391-07 Cal. Soln D	
	EN12916:2006	98°C
	IP391-07 Cal. Soln A	98°C
Flash point	EN12916:2006	98°C
	IP391-07 Cal. Soln B	98°C
	EN12916:2006	98°C
	IP391-07 Cal. Soln C	98°C
	EN12916:2006	98°C
Evaporation rate	IP391-07 Cal. Soln D	
	EN12916:2006	Closed cup: -1.11°C
	IP391-07 Cal. Soln A	Closed cup: -1.11°C
	EN12916:2006	Closed cup: -1.11°C
	IP391-07 Cal. Soln B	Closed cup: -1.11°C
Flammability (solid, gas)	EN12916:2006	Closed cup: -1.11°C
	IP391-07 Cal. Soln C	Closed cup: -1.11°C
	EN12916:2006	Closed cup: -1.11°C
	IP391-07 Cal. Soln D	
	EN12916:2006	Closed cup: -1.11°C
Upper/lower flammability or explosive limits	EN12916:2006	Not available.
	IP391-07 Cal. Soln A	Not available.
	EN12916:2006	Not available.
	IP391-07 Cal. Soln B	Not available.
	EN12916:2006	Not available.
Vapour pressure	IP391-07 Cal. Soln C	Not available.
	EN12916:2006	Not applicable.
	IP391-07 Cal. Soln D	Not applicable.
	EN12916:2006	Not applicable.
	IP391-07 Cal. Soln A	Not applicable.
Date of issue/Date of revision	EN12916:2006	Lower: 1.05%
	IP391-07 Cal. Soln A	Upper: 6.7%
	EN12916:2006	Lower: 1.05%
	IP391-07 Cal. Soln B	Upper: 6.7%
	EN12916:2006	Lower: 1.05%
Date of issue/Date of revision	IP391-07 Cal. Soln C	Upper: 6.7%
	EN12916:2006	Lower: 1.05%
	IP391-07 Cal. Soln D	Upper: 6.7%
	EN12916:2006	Not available.
	IP391-07 Cal. Soln A	Not available.
Date of issue/Date of revision	EN12916:2006	Not available.
	IP391-07 Cal. Soln B	Not available.
	EN12916:2006	Not available.
	IP391-07 Cal. Soln C	Not available.
	EN12916:2006	Not available.
Date of issue/Date of revision	IP391-07 Cal. Soln D	Not available.
	EN12916:2006	Not available.
	IP391-07 Cal. Soln A	Not available.
	EN12916:2006	Not available.
	IP391-07 Cal. Soln B	Not available.
Date of issue/Date of revision	EN12916:2006	Not available.
	IP391-07 Cal. Soln C	Not available.
	EN12916:2006	Not available.
	IP391-07 Cal. Soln D	Not available.
	EN12916:2006	Not available.

SECTION 9: Physical and chemical properties

Vapour density	: EN12916:2006	3.5 [Air = 1]
	IP391-07 Cal. Soln A	
	EN12916:2006	3.5 [Air = 1]
	IP391-07 Cal. Soln B	
	EN12916:2006	3.5 [Air = 1]
Relative density	IP391-07 Cal. Soln C	
	EN12916:2006	3.5 [Air = 1]
	IP391-07 Cal. Soln D	
	: EN12916:2006	0.684
	IP391-07 Cal. Soln A	
Solubility(ies)	EN12916:2006	0.684
	IP391-07 Cal. Soln B	
	EN12916:2006	0.684
	IP391-07 Cal. Soln C	
	EN12916:2006	0.684
Partition coefficient: n-octanol/water	IP391-07 Cal. Soln D	
	: EN12916:2006	Insoluble in the following materials: cold water and hot water.
	IP391-07 Cal. Soln A	
	EN12916:2006	Insoluble in the following materials: cold water and hot water.
	IP391-07 Cal. Soln B	
Auto-ignition temperature	EN12916:2006	Insoluble in the following materials: cold water and hot water.
	IP391-07 Cal. Soln C	
	EN12916:2006	Insoluble in the following materials: cold water and hot water.
	IP391-07 Cal. Soln D	
	: EN12916:2006	Not available.
Decomposition temperature	IP391-07 Cal. Soln A	
	EN12916:2006	Not available.
	IP391-07 Cal. Soln B	
	EN12916:2006	Not available.
	IP391-07 Cal. Soln C	
Viscosity	EN12916:2006	Not available.
	IP391-07 Cal. Soln D	
	EN12916:2006	Not available.
	IP391-07 Cal. Soln A	
	EN12916:2006	Not available.
Auto-ignition temperature	IP391-07 Cal. Soln B	
	EN12916:2006	215°C
	IP391-07 Cal. Soln C	
	EN12916:2006	215°C
	IP391-07 Cal. Soln D	
Decomposition temperature	EN12916:2006	Not available.
	IP391-07 Cal. Soln A	
	EN12916:2006	Not available.
	IP391-07 Cal. Soln B	
	EN12916:2006	Not available.
Viscosity	IP391-07 Cal. Soln C	
	EN12916:2006	Not available.
	IP391-07 Cal. Soln D	
	EN12916:2006	Not available.
	IP391-07 Cal. Soln A	
Auto-ignition temperature	EN12916:2006	215°C
	IP391-07 Cal. Soln B	
	EN12916:2006	215°C
	IP391-07 Cal. Soln C	
	EN12916:2006	215°C
Decomposition temperature	IP391-07 Cal. Soln D	
	EN12916:2006	Not available.
	IP391-07 Cal. Soln A	
	EN12916:2006	Not available.
	IP391-07 Cal. Soln B	
Viscosity	EN12916:2006	Not available.
	IP391-07 Cal. Soln C	
	EN12916:2006	Not available.
	IP391-07 Cal. Soln D	
	EN12916:2006	Not available.

SECTION 9: Physical and chemical properties

Explosive properties	: EN12916:2006 IP391-07 Cal. Soln A	Not available.
	EN12916:2006 IP391-07 Cal. Soln B	Not available.
	EN12916:2006 IP391-07 Cal. Soln C	Not available.
	EN12916:2006 IP391-07 Cal. Soln D	Not available.
Oxidising properties	: EN12916:2006 IP391-07 Cal. Soln A	Not available.
	EN12916:2006 IP391-07 Cal. Soln B	Not available.
	EN12916:2006 IP391-07 Cal. Soln C	Not available.
	EN12916:2006 IP391-07 Cal. Soln D	Not available.

9.2 Other information

No additional information.

SECTION 10: Stability and reactivity

10.1 Reactivity	: EN12916:2006 IP391-07 Cal. Soln A	No specific test data related to reactivity available for this product or its ingredients.
	EN12916:2006 IP391-07 Cal. Soln B	No specific test data related to reactivity available for this product or its ingredients.
	EN12916:2006 IP391-07 Cal. Soln C	No specific test data related to reactivity available for this product or its ingredients.
	EN12916:2006 IP391-07 Cal. Soln D	No specific test data related to reactivity available for this product or its ingredients.
10.2 Chemical stability	: EN12916:2006 IP391-07 Cal. Soln A	The product is stable.
	EN12916:2006 IP391-07 Cal. Soln B	The product is stable.
	EN12916:2006 IP391-07 Cal. Soln C	The product is stable.
	EN12916:2006 IP391-07 Cal. Soln D	The product is stable.
10.3 Possibility of hazardous reactions	: EN12916:2006 IP391-07 Cal. Soln A	Under normal conditions of storage and use, hazardous reactions will not occur.
	EN12916:2006 IP391-07 Cal. Soln B	Under normal conditions of storage and use, hazardous reactions will not occur.
	EN12916:2006 IP391-07 Cal. Soln C	Under normal conditions of storage and use, hazardous reactions will not occur.
	EN12916:2006 IP391-07 Cal. Soln D	Under normal conditions of storage and use, hazardous reactions will not occur.
10.4 Conditions to avoid	: EN12916:2006 IP391-07 Cal. Soln A	Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.
	EN12916:2006 IP391-07 Cal. Soln B	Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.
	EN12916:2006 IP391-07 Cal. Soln C	Avoid all possible sources of ignition (spark or flame). Do not pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.
	EN12916:2006 IP391-07	Avoid all possible sources of ignition (spark or flame). Do not

SECTION 10: Stability and reactivity

Cal. Soln D pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. Do not allow vapour to accumulate in low or confined areas.

- 10.5 Incompatible materials** :
- EN12916:2006 IP391-07 Cal. Soln A Reactive or incompatible with the following materials: oxidizing materials
 - EN12916:2006 IP391-07 Cal. Soln B Reactive or incompatible with the following materials: oxidizing materials
 - EN12916:2006 IP391-07 Cal. Soln C Reactive or incompatible with the following materials: oxidizing materials
 - EN12916:2006 IP391-07 Cal. Soln D Reactive or incompatible with the following materials: oxidizing materials

- 10.6 Hazardous decomposition products** :
- EN12916:2006 IP391-07 Cal. Soln A Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 - EN12916:2006 IP391-07 Cal. Soln B Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 - EN12916:2006 IP391-07 Cal. Soln C Under normal conditions of storage and use, hazardous decomposition products should not be produced.
 - EN12916:2006 IP391-07 Cal. Soln D 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
EN12916:2006 IP391-07 Cal. Soln A				
n-Heptane	LC50 Inhalation Vapour	Rat	103 g/m ³	4 hours
o-xylene	LC50 Inhalation Vapour	Rat	48000 ppm	4 hours
Phenanthrene	LC50 Inhalation Vapour	Rat	5300 ppm	4 hours
	LD50 Oral	Rat	3000 mg/kg	-
	LD50 Oral	Rat	1.8 g/kg	-
EN12916:2006 IP391-07 Cal. Soln B				
n-Heptane	LC50 Inhalation Vapour	Rat	103 g/m ³	4 hours
o-xylene	LC50 Inhalation Vapour	Rat	48000 ppm	4 hours
Phenanthrene	LC50 Inhalation Vapour	Rat	5300 ppm	4 hours
	LD50 Oral	Rat	3000 mg/kg	-
	LD50 Oral	Rat	1.8 g/kg	-
EN12916:2006 IP391-07 Cal. Soln C				
n-Heptane	LC50 Inhalation Vapour	Rat	103 g/m ³	4 hours
Phenanthrene	LC50 Inhalation Vapour	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	1.8 g/kg	-
EN12916:2006 IP391-07 Cal. Soln D				
n-Heptane	LC50 Inhalation Vapour	Rat	103 g/m ³	4 hours
Phenanthrene	LC50 Inhalation Vapour	Rat	48000 ppm	4 hours
	LD50 Oral	Rat	1.8 g/kg	-

Acute toxicity estimates

SECTION 11: Toxicological information

Route	ATE value
EN12916:2006 IP391-07 Cal. Soln A Dermal Inhalation (vapours)	20680.2 mg/kg 206.8 mg/l
EN12916:2006 IP391-07 Cal. Soln B Dermal Inhalation (vapours)	78097.3 mg/kg 781 mg/l

Irritation/Corrosion

Conclusion/Summary : Not available.

Sensitiser

Conclusion/Summary : Not available.

Chronic toxicity / Carcinogenicity / Mutagenicity / Teratogenicity / Reproductive toxicity

Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name	Category	Route of exposure	Target organs
EN12916:2006 IP391-07 Cal. Soln A n-Heptane	Category 3	Not applicable.	Narcotic effects
EN12916:2006 IP391-07 Cal. Soln B n-Heptane	Category 3	Not applicable.	Narcotic effects
EN12916:2006 IP391-07 Cal. Soln C n-Heptane	Category 3	Not applicable.	Narcotic effects
EN12916:2006 IP391-07 Cal. Soln D n-Heptane	Category 3	Not applicable.	Narcotic effects

Specific target organ toxicity (repeated exposure)

Not available.

Aspiration hazard

Product/ingredient name	Result
EN12916:2006 IP391-07 Cal. Soln A EN12916:2006 IP391-07 Cal. Soln A n-Heptane	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1
EN12916:2006 IP391-07 Cal. Soln B EN12916:2006 IP391-07 Cal. Soln B n-Heptane	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1
EN12916:2006 IP391-07 Cal. Soln C EN12916:2006 IP391-07 Cal. Soln C n-Heptane	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1
EN12916:2006 IP391-07 Cal. Soln D EN12916:2006 IP391-07 Cal. Soln D n-Heptane	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

Information on likely routes of exposure :

EN12916:2006 IP391-07 Cal. Soln A	Routes of entry anticipated: Oral, Dermal, Inhalation.
EN12916:2006 IP391-07 Cal. Soln B	Routes of entry anticipated: Oral, Dermal, Inhalation.
EN12916:2006 IP391-07 Cal. Soln C	Routes of entry anticipated: Oral, Dermal, Inhalation.
EN12916:2006 IP391-07 Cal. Soln D	Routes of entry anticipated: Oral, Dermal, Inhalation.

Potential acute health effects

SECTION 11: Toxicological information

Inhalation	:	EN12916:2006 IP391-07 Cal. Soln A	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
	:	EN12916:2006 IP391-07 Cal. Soln B	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
	:	EN12916:2006 IP391-07 Cal. Soln C	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
	:	EN12916:2006 IP391-07 Cal. Soln D	Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
Ingestion	:	EN12916:2006 IP391-07 Cal. Soln A	Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
	:	EN12916:2006 IP391-07 Cal. Soln B	Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
	:	EN12916:2006 IP391-07 Cal. Soln C	Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
	:	EN12916:2006 IP391-07 Cal. Soln D	Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.
Skin contact	:	EN12916:2006 IP391-07 Cal. Soln A	Causes skin irritation.
	:	EN12916:2006 IP391-07 Cal. Soln B	Causes skin irritation.
	:	EN12916:2006 IP391-07 Cal. Soln C	Causes skin irritation.
	:	EN12916:2006 IP391-07 Cal. Soln D	Causes skin irritation.
Eye contact	:	EN12916:2006 IP391-07 Cal. Soln A	No known significant effects or critical hazards.
	:	EN12916:2006 IP391-07 Cal. Soln B	No known significant effects or critical hazards.
	:	EN12916:2006 IP391-07 Cal. Soln C	No known significant effects or critical hazards.
	:	EN12916:2006 IP391-07 Cal. Soln D	No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

Inhalation	:	EN12916:2006 IP391-07 Cal. Soln A	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	:	EN12916:2006 IP391-07 Cal. Soln B	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	:	EN12916:2006 IP391-07 Cal. Soln C	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness
	:	EN12916:2006 IP391-07 Cal. Soln D	Adverse symptoms may include the following: nausea or vomiting headache drowsiness/fatigue dizziness/vertigo unconsciousness

SECTION 11: Toxicological information

Ingestion	:	EN12916:2006 IP391-07 Cal. Soln A	Adverse symptoms may include the following: nausea or vomiting
	:	EN12916:2006 IP391-07 Cal. Soln B	Adverse symptoms may include the following: nausea or vomiting
	:	EN12916:2006 IP391-07 Cal. Soln C	Adverse symptoms may include the following: nausea or vomiting
	:	EN12916:2006 IP391-07 Cal. Soln D	Adverse symptoms may include the following: nausea or vomiting
Skin contact	:	EN12916:2006 IP391-07 Cal. Soln A	Adverse symptoms may include the following: irritation redness
	:	EN12916:2006 IP391-07 Cal. Soln B	Adverse symptoms may include the following: irritation redness
	:	EN12916:2006 IP391-07 Cal. Soln C	Adverse symptoms may include the following: irritation redness
	:	EN12916:2006 IP391-07 Cal. Soln D	Adverse symptoms may include the following: irritation redness
Eye contact	:	EN12916:2006 IP391-07 Cal. Soln A	Adverse symptoms may include the following: pain or irritation watering redness
	:	EN12916:2006 IP391-07 Cal. Soln B	Adverse symptoms may include the following: pain or irritation watering redness
	:	EN12916:2006 IP391-07 Cal. Soln C	Adverse symptoms may include the following: pain or irritation watering redness
	:	EN12916:2006 IP391-07 Cal. Soln D	Adverse symptoms may include the following: pain or irritation watering redness

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

SECTION 11: Toxicological information

General	:	EN12916:2006 IP391-07 Cal. Soln A	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln B	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln C	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln D	No known significant effects or critical hazards.
Carcinogenicity	:	EN12916:2006 IP391-07 Cal. Soln A	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln B	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln C	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln D	No known significant effects or critical hazards.
Mutagenicity	:	EN12916:2006 IP391-07 Cal. Soln A	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln B	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln C	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln D	No known significant effects or critical hazards.
Teratogenicity	:	EN12916:2006 IP391-07 Cal. Soln A	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln B	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln C	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln D	No known significant effects or critical hazards.
Developmental effects	:	EN12916:2006 IP391-07 Cal. Soln A	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln B	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln C	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln D	No known significant effects or critical hazards.
Fertility effects	:	EN12916:2006 IP391-07 Cal. Soln A	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln B	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln C	No known significant effects or critical hazards.
		EN12916:2006 IP391-07 Cal. Soln D	No known significant effects or critical hazards.
Other information	:	EN12916:2006 IP391-07 Cal. Soln A	Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.
		EN12916:2006 IP391-07 Cal. Soln B	Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.
		EN12916:2006 IP391-07 Cal. Soln C	Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.
		EN12916:2006 IP391-07 Cal. Soln D	Adverse symptoms may include the following: Repeated exposure may cause skin dryness or cracking.

SECTION 12: Ecological information

12.1 Toxicity

Product/ingredient name	Result	Species	Exposure
EN12916:2006 IP391-07 Cal. Soln A n-Heptane o-xylene Fluorene Phenanthrene	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
	Acute EC50 4700 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 12700 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 1390 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 7600 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 3.4 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 212 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 0.91 mg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Chronic NOEC 0.125 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 0.125 mg/l Fresh water	Fish - Lepomis macrochirus - Fingerling	30 days
	Acute EC50 324 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	3 days
	Acute EC50 0.279 mg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
Acute EC50 0.117 mg/l Fresh water	Daphnia - Daphnia magna - Adult	48 hours	
Acute EC50 0.049 mg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours	
Chronic NOEC 0.658 mg/l Fresh water	Aquatic plants - Lemna minor	96 hours	
Chronic NOEC 48 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days	
Chronic NOEC 0.005 mg/l Fresh water	Fish - Oncorhynchus mykiss - Embryo	90 days	
EN12916:2006 IP391-07 Cal. Soln B n-Heptane o-xylene Fluorene Phenanthrene	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
	Acute EC50 4700 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	72 hours
	Acute EC50 12700 µg/l Fresh water	Crustaceans - Artemia sp. - Nauplii	48 hours
	Acute EC50 1390 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	48 hours
	Acute LC50 7600 µg/l Fresh water	Fish - Oncorhynchus mykiss	96 hours
	Acute EC50 3.4 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 212 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 0.91 mg/l Fresh water	Fish - Lepomis macrochirus	96 hours
	Chronic NOEC 0.125 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 0.125 mg/l Fresh water	Fish - Lepomis macrochirus - Fingerling	30 days
	Acute EC50 324 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	3 days
	Acute EC50 0.279 mg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
Acute EC50 0.117 mg/l Fresh water	Daphnia - Daphnia magna - Adult	48 hours	
Acute EC50 0.049 mg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling,	96 hours	

SECTION 12: Ecological information

EN12916:2006 IP391-07 Cal. Soln C n-Heptane	Chronic NOEC 0.658 mg/l Fresh water	Weanling)	96 hours
	Chronic NOEC 48 µg/l Fresh water	Aquatic plants - Lemna minor	21 days
	Chronic NOEC 0.005 mg/l Fresh water	Daphnia - Daphnia magna - Neonate	90 days
		Fish - Oncorhynchus mykiss - Embryo	
Fluorene	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
	Acute EC50 3.4 mg/l Fresh water	Algae - Pseudokirchneriella subcapitata	96 hours
	Acute EC50 212 µg/l Fresh water	Daphnia - Daphnia pulex - Neonate	48 hours
	Acute LC50 0.91 mg/l Fresh water	Fish - Lepomis macrochirus	96 hours
Phenanthrene	Chronic NOEC 0.125 mg/l Fresh water	Daphnia - Daphnia magna	21 days
	Chronic NOEC 0.125 mg/l Fresh water	Fish - Lepomis macrochirus - Fingerling	30 days
	Acute EC50 324 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	3 days
	Acute EC50 0.279 mg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 0.117 mg/l Fresh water	Daphnia - Daphnia magna - Adult	48 hours
	Acute EC50 0.049 mg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 0.658 mg/l Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 48 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
EN12916:2006 IP391-07 Cal. Soln D n-Heptane	Chronic NOEC 0.005 mg/l Fresh water	Fish - Oncorhynchus mykiss - Embryo	90 days
	Acute LC50 375000 µg/l Fresh water	Fish - Oreochromis mossambicus	96 hours
Phenanthrene	Acute EC50 324 µg/l Fresh water	Algae - Pseudokirchneriella subcapitata	3 days
	Acute EC50 0.279 mg/l Fresh water	Crustaceans - Gammarus pseudolimnaeus - Adult	48 hours
	Acute EC50 0.117 mg/l Fresh water	Daphnia - Daphnia magna - Adult	48 hours
	Acute EC50 0.049 mg/l Fresh water	Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 0.658 mg/l Fresh water	Aquatic plants - Lemna minor	96 hours
	Chronic NOEC 48 µg/l Fresh water	Daphnia - Daphnia magna - Neonate	21 days
	Chronic NOEC 0.005 mg/l Fresh water	Fish - Oncorhynchus mykiss - Embryo	90 days

12.2 Persistence and degradability

Not available.

SECTION 12: Ecological information

Product/ingredient name	Aquatic half-life	Photolysis	Biodegradability
EN12916:2006 IP391-07 Cal. Soln A o-xylene	-	-	Inherent
EN12916:2006 IP391-07 Cal. Soln B o-xylene	-	-	Inherent

12.3 Bioaccumulative potential

Product/ingredient name	LogP _{ow}	BCF	Potential
EN12916:2006 IP391-07 Cal. Soln A n-Heptane	4.66	552	high
o-xylene	3.12	8.1 to 25.9	low
Fluorene	4.18	524.81	high
Phenanthrene	4.46	2511.89	high
EN12916:2006 IP391-07 Cal. Soln B n-Heptane	4.66	552	high
o-xylene	3.12	8.1 to 25.9	low
Fluorene	4.18	524.81	high
Phenanthrene	4.46	2511.89	high
EN12916:2006 IP391-07 Cal. Soln C n-Heptane	4.66	552	high
Fluorene	4.18	524.81	high
Phenanthrene	4.46	2511.89	high
EN12916:2006 IP391-07 Cal. Soln D n-Heptane	4.66	552	high
Phenanthrene	4.46	2511.89	high

12.4 Mobility in soil

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

Mobility : Not available.

12.5 Results of PBT and vPvB assessment

PBT : Not applicable.

vPvB : Not applicable.

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.

SECTION 13: Disposal considerations

- 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. Vapour from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers.

SECTION 14: Transport information

Regulatory information

ADR/RID / IMDG / IATA : Not regulated.

Additional information : **Remarks**
De minimis quantities

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 Annex II of Marpol and the IBC Code : Not available.

SECTION 15: Regulatory information

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

EU Regulation (EC) No. 1907/2006 (REACH)

Annex XIV - List of substances subject to authorisation

Annex XIV

None of the components are listed.

Substances of very high concern

None of the components are listed.

Annex XVII - Restrictions on the manufacture, placing on the market and use of certain dangerous substances, mixtures and articles	EN12916:2006	Not applicable.
	IP391-07 Cal. Soln A	
	EN12916:2006	Not applicable.
	IP391-07 Cal. Soln B	
	EN12916:2006	Not applicable.
	IP391-07 Cal. Soln C	
	EN12916:2006	Not applicable.
	IP391-07 Cal. Soln D	

Other EU regulations

Europe inventory : All components are listed or exempted.

Seveso Directive

This product is controlled under the Seveso Directive.

Danger criteria

SECTION 15: Regulatory information

Category

EN12916:2006 IP391-07 Cal. Soln A

P5c: Flammable liquids 2 and 3 not falling under P5a or P5b
E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1

EN12916:2006 IP391-07 Cal. Soln B

P5c: Flammable liquids 2 and 3 not falling under P5a or P5b
E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1

EN12916:2006 IP391-07 Cal. Soln C

P5c: Flammable liquids 2 and 3 not falling under P5a or P5b
E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1

EN12916:2006 IP391-07 Cal. Soln D

P5c: Flammable liquids 2 and 3 not falling under P5a or P5b
E1: Hazardous to the aquatic environment - Acute 1 or Chronic 1

[National regulations](#)

[International regulations](#)

[Chemical Weapon Convention List Schedules I, II & III Chemicals](#)

Not listed.

[Montreal Protocol \(Annexes A, B, C, E\)](#)

Not listed.

[Stockholm Convention on Persistent Organic Pollutants](#)

Not listed.

[Rotterdam Convention on Prior Inform Consent \(PIC\)](#)

Not listed.

[UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Ingredient name	List name	Status
EN12916:2006 IP391-07 Cal. Soln A PAHs PAHs	POPs - Annex 3 POPs - Annex 3	Listed Listed
EN12916:2006 IP391-07 Cal. Soln B PAHs PAHs	POPs - Annex 3 POPs - Annex 3	Listed Listed
EN12916:2006 IP391-07 Cal. Soln C PAHs	POPs - Annex 3	Listed

[International lists](#)

[National inventory](#)

- Australia** : All components are listed or exempted.
- Canada** : All components are listed or exempted.
- China** : All components are listed or exempted.
- Japan** : **Japan inventory (ENCS)**: All components are listed or exempted.
Japan inventory (ISHL): All components are listed or exempted.
- Malaysia** : Not determined.
- New Zealand** : All components are listed or exempted.
- Philippines** : All components are listed or exempted.
- Republic of Korea** : All components are listed or exempted.
- Taiwan** : All components are listed or exempted.
- Turkey** : Not determined.
- United States** : All components are listed or exempted.

SECTION 15: Regulatory information

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

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]
 DNEL = Derived No Effect Level
 EUH statement = CLP-specific Hazard statement
 PNEC = Predicted No Effect Concentration
 RRN = REACH Registration Number

Procedure used to derive the classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Classification	Justification
EN12916:2006 IP391-07 Cal. Soln A Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	On basis of test data Calculation method Calculation method Expert judgment Calculation method Calculation method
EN12916:2006 IP391-07 Cal. Soln B Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	On basis of test data Calculation method Calculation method Expert judgment Calculation method Calculation method
EN12916:2006 IP391-07 Cal. Soln C Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	On basis of test data Calculation method Calculation method Expert judgment Calculation method Calculation method
EN12916:2006 IP391-07 Cal. Soln D Flam. Liq. 2, H225 Skin Irrit. 2, H315 STOT SE 3, H336 Asp. Tox. 1, H304 Aquatic Acute 1, H400 Aquatic Chronic 1, H410	On basis of test data Calculation method Calculation method Expert judgment Calculation method Calculation method

Full text of abbreviated H statements : **EN12916:2006 IP391-07 Cal. Soln A**

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
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.

EN12916:2006 IP391-07

SECTION 16: Other information

Cal. Soln B

H225	Highly flammable liquid and vapour.
H226	Flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H312	Harmful in contact with skin.
H315	Causes skin irritation.
H332	Harmful if inhaled.
H336	May cause drowsiness or dizziness.
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.

EN12916:2006 IP391-07

Cal. Soln C

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
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.

EN12916:2006 IP391-07

Cal. Soln D

H225	Highly flammable liquid and vapour.
H302	Harmful if swallowed.
H304	May be fatal if swallowed and enters airways.
H315	Causes skin irritation.
H336	May cause drowsiness or dizziness.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.

Full text of classifications [CLP/GHS] : EN12916:2006 IP391-07

Cal. Soln A

Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
Acute Tox. 4, H312	ACUTE TOXICITY (dermal) - Category 4
Acute Tox. 4, H332	ACUTE TOXICITY (inhalation) - Category 4
Aquatic Acute 1, H400	ACUTE AQUATIC HAZARD - Category 1
Aquatic Chronic 1, H410	LONG-TERM AQUATIC HAZARD - Category 1
Aquatic Chronic 2, H411	LONG-TERM AQUATIC HAZARD - Category 2
Asp. Tox. 1, H304	ASPIRATION HAZARD - Category 1
Flam. Liq. 2, H225	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3, H226	FLAMMABLE LIQUIDS - Category 3
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
STOT SE 3, H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

EN12916:2006 IP391-07

Cal. Soln B

Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
Acute Tox. 4, H312	ACUTE TOXICITY (dermal) - Category 4
Acute Tox. 4, H332	ACUTE TOXICITY (inhalation) - Category 4
Aquatic Acute 1, H400	ACUTE AQUATIC HAZARD - Category 1
Aquatic Chronic 1, H410	LONG-TERM AQUATIC HAZARD - Category 1
Aquatic Chronic 2, H411	LONG-TERM AQUATIC HAZARD - Category 2
Asp. Tox. 1, H304	ASPIRATION HAZARD - Category 1
Flam. Liq. 2, H225	FLAMMABLE LIQUIDS - Category 2
Flam. Liq. 3, H226	FLAMMABLE LIQUIDS - Category 3
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
STOT SE 3, H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

EN12916:2006 IP391-07

SECTION 16: Other information

Cal. Soln C

Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
Aquatic Acute 1, H400	ACUTE AQUATIC HAZARD - Category 1
Aquatic Chronic 1, H410	LONG-TERM AQUATIC HAZARD - Category 1
Aquatic Chronic 2, H411	LONG-TERM AQUATIC HAZARD - Category 2
Asp. Tox. 1, H304	ASPIRATION HAZARD - Category 1
Flam. Liq. 2, H225	FLAMMABLE LIQUIDS - Category 2
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
STOT SE 3, H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

EN12916:2006 IP391-07

Cal. Soln D

Acute Tox. 4, H302	ACUTE TOXICITY (oral) - Category 4
Aquatic Acute 1, H400	ACUTE AQUATIC HAZARD - Category 1
Aquatic Chronic 1, H410	LONG-TERM AQUATIC HAZARD - Category 1
Asp. Tox. 1, H304	ASPIRATION HAZARD - Category 1
Flam. Liq. 2, H225	FLAMMABLE LIQUIDS - Category 2
Skin Irrit. 2, H315	SKIN CORROSION/IRRITATION - Category 2
STOT SE 3, H336	SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

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