Kit Components

Product code	Description
N2972051	**Altus™ HPLC Absorbance PQ Test Solutions**

Components:

700005906-1	Altus™ HPLC Absorbance PQ Test Solution 1
700005906-2	Altus™ HPLC Absorbance PQ Test Solution 2
700005906-3	Altus™ HPLC Absorbance PQ Test Solution 3
700005906-4	Altus™ HPLC Absorbance PQ Test Solution 4

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

1 Identification

· **Product identifier**

· **Trade name: Altus™ HPLC Absorbance PQ Test Solution 1**
· **Article number** 700005906-1
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

*

2 Hazard(s) identification

· **Classification of the substance or mixture**

Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

Health hazard

STOT SE 1 H370 Causes damage to organs.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS02, GHS06, GHS08
· **Signal word** Danger

· **Hazard-determining components of labeling:**
methanol
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H370 Causes damage to organs.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240 Ground/bond container and receiving equipment.

(Contd. on page 2)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 1

(Contd. of page 1)

P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P321	Specific treatment (see on this label).
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

*Health = *1*
Fire = 3
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

*

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*

· **Hazardous components:**

67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	30.0%

· **Additional Components**

58-08-2	caffeine	Acute Tox. 4, H302	0.06%

(Contd. on page 3)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 1

(Contd. of page 2)

7732-18-5	Water		69.94%

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Prevent seepage into sewage system, workpits and cellars.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
67-56-1	methanol	530 ppm

(Contd. on page 4)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 1

(Contd. of page 3)

· **PAC-2:**		
67-56-1	methanol	2,100 ppm

· **PAC-3:**		
67-56-1	methanol	7200* ppm

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI

· **Ingredients with biological limit values:**	
67-56-1 methanol	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

(Contd. on page 5)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 1

(Contd. of page 4)

· **Additional information:** *The lists that were valid during the creation were used as basis.*

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles or safety glasses

*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	*Liquid*
Color:	*Clear*
· **Odor:**	*Characteristic*
· **Odor threshold:**	*Not determined.*
· **pH-value:**	*Not determined.*
· **Change in condition**	
Melting point/Melting range:	*-98 °C (-144.4 °F)*
Boiling point/Boiling range:	*64 °C (147.2 °F)*
· **Flash point:**	*< 23 °C (<73.4 °F)*
· **Flammability (solid, gaseous):**	*Not applicable.*
· **Ignition temperature:**	*455 °C (851 °F)*
· **Decomposition temperature:**	*Not determined.*

(Contd. on page 6)

acc. to OSHA HCS

Trade name: Altus™ HPLC Absorbance PQ Test Solution 1

(Contd. of page 5)

· **Auto igniting:**	*Product is not selfigniting.*
· **Danger of explosion:**	*Product is not explosive. However, formation of explosive air/vapor mixtures are possible.*
· **Explosion limits:**	
Lower:	*5.5 Vol %*
Upper:	*44 Vol %*
· **Vapor pressure at 20 °C (68 °F):**	*128 hPa (96 mm Hg)*
· **Density at 20 °C (68 °F):**	*0.93714 g/cm³ (7.82043 lbs/gal)*
· **Relative density**	*Not determined.*
· **Vapor density**	*Not determined.*
· **Evaporation rate**	*Not determined.*
· **Solubility in / Miscibility with**	
Water:	*Not miscible or difficult to mix.*
· **Partition coefficient (n-octanol/water):**	*Not determined.*
· **Viscosity:**	
Dynamic:	*Not determined.*
Kinematic:	*Not determined.*
· **Solvent content:**	
Organic solvents:	*30.0 %*
Water:	*69.9 %*
VOC content:	*30.00 %*
Solids content:	*0.1 %*
· **Other information**	*No further relevant information available.*

10 Stability and reactivity

· **Reactivity** *No further relevant information available.*
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** *No decomposition if used according to specifications.*
· **Possibility of hazardous reactions** *No dangerous reactions known.*
· **Conditions to avoid** *No further relevant information available.*
· **Incompatible materials:** *No further relevant information available.*
· **Hazardous decomposition products:** *No dangerous decomposition products known.*

*

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
67-56-1 methanol		
Oral	*LD50*	*5,628 mg/kg (rat)*

(Contd. on page 7)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 1

(Contd. of page 6)

Dermal	LD50	15,800 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
58-08-2	caffeine	3

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Dispose of container and materials in accordance with local, regional and national regulations.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

(Contd. on page 8)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 1

(Contd. of page 7)

*

14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN1987
· **UN proper shipping name**	
· **DOT**	Alcohols, n.o.s. (Methanol)
· **ADR**	1987 Alcohols, n.o.s. (Methanol)
· **IMDG**	ALCOHOLS, N.O.S. (METHANOL)
· **IATA**	ALCOHOLS, N.O.S. (METHANOL solution)
· **Transport hazard class(es)**	
· **DOT**	
· **Class**	3 Flammable liquids
· **Label**	3
· **ADR**	
· **Class**	3 (F1) Flammable liquids
· **Label**	3
· **IMDG, IATA**	
· **Class**	3 Flammable liquids
· **Label**	3
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	III
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Flammable liquids
· **Danger code (Kemler):**	33
· **EMS Number:**	F-E,S-D
· **Stowage Category**	A
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.

(Contd. on page 9)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 1

(Contd. of page 8)

· **Transport/Additional information:**

· **DOT**

· **Quantity limitations** On passenger aircraft/rail: 1 L
On cargo aircraft only: 60 L

· **ADR**

· **Excepted quantities (EQ)** Code: E1
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 1000 ml

· **IMDG**

· **Limited quantities (LQ)** 1L

· **Excepted quantities (EQ)** Code: E2
Maximum net quantity per inner packaging: 30 ml
Maximum net quantity per outer packaging: 500 ml

· **UN "Model Regulation":** UN 1987 ALCOHOLS, N.O.S. (METHANOL), 3, III

*

15 Regulatory information

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

7732-18-5	Water		69.94%
67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	30.0%
58-08-2	caffeine	Acute Tox. 4, H302	0.06%

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

67-56-1	methanol

· **TSCA (Toxic Substances Control Act):**

67-56-1	methanol
58-08-2	caffeine
7732-18-5	Water

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

(Contd. on page 10)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 1

(Contd. of page 9)

· **Chemicals known to cause developmental toxicity:**

67-56-1	methanol

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** Environmental, Health and Safety
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety

(Contd. on page 11)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 1

(Contd. of page 10)

OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
· **** Data compared to the previous version altered.***

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

1 Identification

· **Product identifier**

· **Trade name: Altus™ HPLC Absorbance PQ Test Solution 2**
· **Article number** 700005906-2
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

*

2 Hazard(s) identification

· **Classification of the substance or mixture**

Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

Health hazard

STOT SE 1 H370 Causes damage to organs.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS02, GHS06, GHS08
· **Signal word** Danger

· **Hazard-determining components of labeling:**
methanol
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H370 Causes damage to organs.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240 Ground/bond container and receiving equipment.

(Contd. on page 2)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 2

(Contd. of page 1)

P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P321	Specific treatment (see on this label).
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

Health = *1
Fire = 3
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** Mixture of the substances listed below with nonhazardous additions.

· **Hazardous components:**

67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	30.0%

· **Additional Components**

58-08-2	caffeine	Acute Tox. 4, H302	0.0004%

(Contd. on page 3)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 2

(Contd. of page 2)

7732-18-5	Water		69.9996%

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Prevent seepage into sewage system, workpits and cellars.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
67-56-1	methanol	530 ppm

(Contd. on page 4)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 2

(Contd. of page 3)

· **PAC-2:**		
67-56-1	methanol	2,100 ppm

· **PAC-3:**		
67-56-1	methanol	7200* ppm

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI

· **Ingredients with biological limit values:**	
67-56-1 methanol	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

(Contd. on page 5)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 2

(Contd. of page 4)

· **Additional information:** *The lists that were valid during the creation were used as basis.*

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles or safety glasses

*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	*Liquid*
Color:	*Clear*
· **Odor:**	*Characteristic*
· **Odor threshold:**	*Not determined.*
· **pH-value:**	*Not determined.*
· **Change in condition**	
Melting point/Melting range:	*-98 °C (-144.4 °F)*
Boiling point/Boiling range:	*64 °C (147.2 °F)*
· **Flash point:**	*< 23 °C (<73.4 °F)*
· **Flammability (solid, gaseous):**	*Not applicable.*
· **Ignition temperature:**	*455 °C (851 °F)*
· **Decomposition temperature:**	*Not determined.*

(Contd. on page 6)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 2

(Contd. of page 5)

· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Explosion limits:**	
Lower:	5.5 Vol %
Upper:	44 Vol %
· **Vapor pressure at 20 °C (68 °F):**	128 hPa (96 mm Hg)
· **Density at 20 °C (68 °F):**	0.937 g/cm³ (7.81927 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	30.0 %
Water:	70.0 %
VOC content:	30.00 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

*

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

(Contd. on page 7)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 2

(Contd. of page 6)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
58-08-2	caffeine	3

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Dispose of container and materials in accordance with local, regional and national regulations.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

*

14 Transport information

· **UN-Number**
· **DOT, ADR, IMDG, IATA** UN1987

(Contd. on page 8)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 2

(Contd. of page 7)

· **UN proper shipping name**	
· **DOT**	*Alcohols, n.o.s. (Methanol)*
· **ADR**	*1987 Alcohols, n.o.s. (Methanol)*
· **IMDG**	*ALCOHOLS, N.O.S. (METHANOL)*
· **IATA**	*ALCOHOLS, N.O.S. (METHANOL solution)*
· **Transport hazard class(es)**	
· **DOT**	
	
· **Class**	*3 Flammable liquids*
· **Label**	*3*
· **ADR**	
	
· **Class**	*3 (F1) Flammable liquids*
· **Label**	*3*
· **IMDG, IATA**	
	
· **Class**	*3 Flammable liquids*
· **Label**	*3*
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	*III*
· **Environmental hazards:**	
· **Marine pollutant:**	*No*
· **Special precautions for user**	*Warning: Flammable liquids*
· **EMS Number:**	*F-E,S-D*
· **Stowage Category**	*A*
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	*Not applicable.*
· **Transport/Additional information:**	
· **ADR**	
· **Excepted quantities (EQ)**	*Code: E1* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 1000 ml*

(Contd. on page 9)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 2

(Contd. of page 8)

· **UN "Model Regulation":** UN 1987 ALCOHOLS, N.O.S. (METHANOL), 3, III

*

15 Regulatory information

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

7732-18-5	Water		69.9996%
67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	30.0%
58-08-2	caffeine	Acute Tox. 4, H302	0.0004%

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

67-56-1	methanol

· **TSCA (Toxic Substances Control Act):**

67-56-1	methanol
58-08-2	caffeine
7732-18-5	Water

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

67-56-1	methanol

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

(Contd. on page 10)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 2

(Contd. of page 9)

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** Environmental, Health and Safety
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
· *** Data compared to the previous version altered.**

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

1 Identification

· **Product identifier**

· **Trade name: Altus™ HPLC Absorbance PQ Test Solution 3**
· **Article number** 700005906-3
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

*

2 Hazard(s) identification

· **Classification of the substance or mixture**

Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

Health hazard

STOT SE 1 H370 Causes damage to organs.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS02, GHS06, GHS08
· **Signal word** Danger

· **Hazard-determining components of labeling:**
methanol
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H370 Causes damage to organs.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240 Ground/bond container and receiving equipment.

(Contd. on page 2)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 3

(Contd. of page 1)

P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P321	Specific treatment (see on this label).
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

*Health = *1*
Fire = 3
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

*

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*

· **Hazardous components:**

67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	30.0%

· **Additional Components**

58-08-2	caffeine	Acute Tox. 4, H302	0.4%

(Contd. on page 3)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 3

(Contd. of page 2)

7732-18-5	Water		69.6%

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **For safety reasons unsuitable extinguishing agents:** Water with full jet
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:** Prevent seepage into sewage system, workpits and cellars.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.
· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
67-56-1	methanol	530 ppm

(Contd. on page 4)

(Contd. of page 3)

· **PAC-2:**		
67-56-1	methanol	2,100 ppm

· **PAC-3:**		
67-56-1	methanol	7200* ppm

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI

· **Ingredients with biological limit values:**	
67-56-1 methanol	
BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

(Contd. on page 5)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 3

(Contd. of page 4)

· **Additional information:** *The lists that were valid during the creation were used as basis.*

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles or safety glasses

*

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **General Information**	
· **Appearance:**	
Form:	*Liquid*
Color:	*Clear*
· **Odor:**	*Characteristic*
· **Odor threshold:**	*Not determined.*
· **pH-value:**	*Not determined.*
· **Change in condition**	
Melting point/Melting range:	*-98 °C (-144.4 °F)*
Boiling point/Boiling range:	*64 °C (147.2 °F)*
· **Flash point:**	*< 23 °C (<73.4 °F)*
· **Flammability (solid, gaseous):**	*Not applicable.*
· **Ignition temperature:**	*455 °C (851 °F)*
· **Decomposition temperature:**	*Not determined.*

(Contd. on page 6)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 3

(Contd. of page 5)

· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Explosion limits:**	
Lower:	5.5 Vol %
Upper:	44 Vol %
· **Vapor pressure at 20 °C (68 °F):**	128 hPa (96 mm Hg)
· **Density at 20 °C (68 °F):**	0.93792 g/cm³ (7.82694 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Not miscible or difficult to mix.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	30.0 %
Water:	69.6 %
VOC content:	30.00 %
Solids content:	0.4 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

*

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· **LD/LC50 values that are relevant for classification:**		
67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)

(Contd. on page 7)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 3

(Contd. of page 6)

Dermal	LD50	15,800 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic

· **Carcinogenic categories**

· **IARC (International Agency for Research on Cancer)**		
58-08-2	caffeine	3

· **NTP (National Toxicology Program)**
None of the ingredients is listed.

· **OSHA-Ca (Occupational Safety & Health Administration)**
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Dispose of container and materials in accordance with local, regional and national regulations.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

(Contd. on page 8)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 3

(Contd. of page 7)

*

14 Transport information

· **UN-Number**	
· **DOT, ADR, IMDG, IATA**	UN1987
· **UN proper shipping name**	
· **DOT**	Alcohols, n.o.s. (Methanol)
· **ADR**	1987 Alcohols, n.o.s. (Methanol)
· **IMDG**	ALCOHOLS, N.O.S. (METHANOL)
· **IATA**	ALCOHOLS, N.O.S. (METHANOL solution)
· **Transport hazard class(es)**	
· **DOT**	
· **Class**	3 Flammable liquids
· **Label**	3
· **ADR**	
· **Class**	3 (F1) Flammable liquids
· **Label**	3
· **IMDG, IATA**	
· **Class**	3 Flammable liquids
· **Label**	3
· **Packing group**	
· **DOT, ADR, IMDG, IATA**	III
· **Environmental hazards:**	
· **Marine pollutant:**	No
· **Special precautions for user**	Warning: Flammable liquids
· **EMS Number:**	F-E,S-D
· **Stowage Category**	A
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	Not applicable.
· **UN "Model Regulation":**	UN 1987 ALCOHOLS, N.O.S. (METHANOL), 3, III

(Contd. on page 9)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 3

(Contd. of page 8)

*

15 Regulatory information

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

7732-18-5	Water		69.6%
67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	30.0%
58-08-2	caffeine	Acute Tox. 4, H302	0.4%

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

67-56-1	methanol

· **TSCA (Toxic Substances Control Act):**

67-56-1	methanol
58-08-2	caffeine
7732-18-5	Water

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

· **Chemicals known to cause developmental toxicity:**

67-56-1	methanol

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

(Contd. on page 10)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 3

(Contd. of page 9)

· **Chemical safety assessment:** *A Chemical Safety Assessment has not been carried out.*

16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** *Environmental, Health and Safety*
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
· **** Data compared to the previous version altered.***

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

1 Identification

· **Product identifier**

· **Trade name: Altus™ HPLC Absorbance PQ Test Solution 4**
· **Article number** 700005906-4
· **Application of the substance / the mixture** Laboratory chemicals

· **Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**

PerkinElmer, Inc.
710 Bridgeport Avenue
Shelton, Connecticut 06484 USA
CustomerCareUS@perkinelmer.com
203-925-4600
· **Emergency telephone number:**
CHEMTREC (within US) 800-424-9300
CHEMTREC (from outside US) +1 703-527-3887 (call collect)
CHEMTREC (within AU) +(61)-290372994

2 Hazard(s) identification

· **Classification of the substance or mixture**

Flame

Flam. Liq. 2 H225 Highly flammable liquid and vapor.

Skull and crossbones

Acute Tox. 3 H331 Toxic if inhaled.

Health hazard

STOT SE 1 H370 Causes damage to organs.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).
· **Hazard pictograms** GHS02, GHS06, GHS08
· **Signal word** Danger

· **Hazard-determining components of labeling:**
methanol
· **Hazard statements**
H225 Highly flammable liquid and vapor.
H331 Toxic if inhaled.
H370 Causes damage to organs.
· **Precautionary statements**
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P240 Ground/bond container and receiving equipment.

(Contd. on page 2)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 4

(Contd. of page 1)

P241	Use explosion-proof electrical/ventilating/lighting/equipment.
P242	Use only non-sparking tools.
P243	Take precautionary measures against static discharge.
P260	Do not breathe dust/fume/gas/mist/vapors/spray.
P264	Wash thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P303+P361+P353	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P321	Specific treatment (see on this label).
P370+P378	In case of fire: Use for extinction: CO2, powder or water spray.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up.
P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

· **Classification system:**
· **NFPA ratings (scale 0 - 4)**

Health = 1
Fire = 3
Reactivity = 0

· **HMIS-ratings (scale 0 - 4)**

*Health = *1*
Fire = 3
Reactivity = 0

· **Other hazards**
The product does not contain any organic halogen compounds (AOX), nitrates, heavy metal compounds or formaldehydes.
· **Results of PBT and vPvB assessment**
· **PBT:** *Not applicable.*
· **vPvB:** *Not applicable.*

3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** *Mixture of the substances listed below with nonhazardous additions.*

· **Hazardous components:**

67-56-1	methanol	Flam. Liq. 2, H225 Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331 STOT SE 1, H370	30.0%

(Contd. on page 3)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 4

(Contd. of page 2)

· **Additional Components**		
7732-18-5	Water	70.0%

4 First-aid measures

· **Description of first aid measures**
· **General information:**
Immediately remove any clothing soiled by the product.
Remove breathing apparatus only after contaminated clothing have been completely removed.
In case of irregular breathing or respiratory arrest provide artificial respiration.
· **After inhalation:**
Supply fresh air or oxygen; call for doctor.
In case of unconsciousness place patient stably in side position for transportation.
· **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
· **After eye contact:** Rinse opened eye for several minutes under running water. Then consult a doctor.
· **After swallowing:** If symptoms persist consult doctor.
· **Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **Special hazards arising from the substance or mixture** No further relevant information available.
· **Advice for firefighters**
· **Protective equipment:** Mouth respiratory protective device.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
Wear protective equipment. Keep unprotected persons away.
· **Environmental precautions:**
Prevent seepage into sewage system, workpits and cellars.
Dilute with plenty of water.
· **Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
· **Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

(Contd. on page 4)

(Contd. of page 3)

· **Protective Action Criteria for Chemicals**

· **PAC-1:**		
67-56-1	methanol	530 ppm
· **PAC-2:**		
67-56-1	methanol	2,100 ppm
· **PAC-3:**		
67-56-1	methanol	7200* ppm

7 Handling and storage

· **Handling:**
· **Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Open and handle receptacle with care.
· **Information about protection against explosions and fires:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.
Keep respiratory protective device available.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:** Store in a cool location.
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:**
Keep receptacle tightly sealed.
Store in cool, dry conditions in well sealed receptacles.
· **Specific end use(s)** No further relevant information available.

8 Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **Control parameters**

· **Components with limit values that require monitoring at the workplace:**	
67-56-1 methanol	
PEL	Long-term value: 260 mg/m³, 200 ppm
REL	Short-term value: 325 mg/m³, 250 ppm Long-term value: 260 mg/m³, 200 ppm Skin
TLV	Short-term value: 328 mg/m³, 250 ppm Long-term value: 262 mg/m³, 200 ppm Skin; BEI

(Contd. on page 5)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 4

(Contd. of page 4)

· **Ingredients with biological limit values:**

67-56-1 methanol

BEI	15 mg/L Medium: urine Time: end of shift Parameter: Methanol (background, nonspecific)

· **Additional information:** The lists that were valid during the creation were used as basis.

· **Exposure controls**
· **Personal protective equipment:**
· **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Store protective clothing separately.
· **Breathing equipment:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use respiratory protective device that is independent of circulating air.
· **Protection of hands:**
The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation
· **Material of gloves**
The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:**

Tightly sealed goggles or safety glasses

9 Physical and chemical properties

· **Information on basic physical and chemical properties**
· **General Information**
· **Appearance:**

Form:	Liquid
Color:	Clear
· **Odor:**	Characteristic
· **Odor threshold:**	Not determined.
· **pH-value:**	Not determined.
· **Change in condition**	
Melting point/Melting range:	Undetermined.

(Contd. on page 6)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 4

(Contd. of page 5)

Boiling point/Boiling range:	64 °C (147.2 °F)
· **Flash point:**	< 23 °C (<73.4 °F)
· **Flammability (solid, gaseous):**	Not applicable.
· **Ignition temperature:**	455 °C (851 °F)
· **Decomposition temperature:**	Not determined.
· **Auto igniting:**	Product is not selfigniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Explosion limits:**	
Lower:	5.5 Vol %
Upper:	44 Vol %
· **Vapor pressure at 20 °C (68 °F):**	128 hPa (96 mm Hg)
· **Density at 20 °C (68 °F):**	0.937 g/cm³ (7.81927 lbs/gal)
· **Relative density**	Not determined.
· **Vapor density**	Not determined.
· **Evaporation rate**	Not determined.
· **Solubility in / Miscibility with**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	
Dynamic:	Not determined.
Kinematic:	Not determined.
· **Solvent content:**	
Organic solvents:	30.0 %
Water:	70.0 %
VOC content:	30.00 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** No further relevant information available.
· **Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **Possibility of hazardous reactions** No dangerous reactions known.
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:** No further relevant information available.
· **Hazardous decomposition products:** No dangerous decomposition products known.

(Contd. on page 7)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 4

(Contd. of page 6)

11 Toxicological information

· **Information on toxicological effects**
· **Acute toxicity:**

· LD/LC50 values that are relevant for classification:		
67-56-1 methanol		
Oral	LD50	5,628 mg/kg (rat)
Dermal	LD50	15,800 mg/kg (rabbit)

· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **on the eye:** No irritating effect.
· **Sensitization:** No sensitizing effects known.
· **Additional toxicological information:**
The product shows the following dangers according to internally approved calculation methods for preparations:
Toxic

· **Carcinogenic categories**

· IARC (International Agency for Research on Cancer)
None of the ingredients is listed.

· NTP (National Toxicology Program)
None of the ingredients is listed.

· OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

12 Ecological information

· **Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **Persistence and degradability** No further relevant information available.
· **Behavior in environmental systems:**
· **Bioaccumulative potential** No further relevant information available.
· **Mobility in soil** No further relevant information available.
· **Additional ecological information:**
· **General notes:**
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **Other adverse effects** No further relevant information available.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Dispose of container and materials in accordance with local, regional and national regulations.

(Contd. on page 8)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 4

(Contd. of page 7)

· **Uncleaned packagings:**
· **Recommendation:** *Disposal must be made according to official regulations.*
· **Recommended cleansing agent:** *Water, if necessary with cleansing agents.*

*

14 Transport information

· **UN-Number**
· **DOT, ADR, IMDG, IATA** *UN1987*

· **UN proper shipping name**
· **DOT** *Alcohols, n.o.s. (Methanol)*
· **ADR** *1987 Alcohols, n.o.s. (Methanol)*
· **IMDG** *ALCOHOLS, N.O.S. (METHANOL)*
· **IATA** *ALCOHOLS, N.O.S. (METHANOL solution)*

· **Transport hazard class(es)**

· **DOT**

· **Class** *3 Flammable liquids*
· **Label** *3*

· **ADR**

· **Class** *3 (F1) Flammable liquids*
· **Label** *3*

· **IMDG, IATA**

· **Class** *3 Flammable liquids*
· **Label** *3*

· **Packing group**
· **DOT, ADR, IMDG, IATA** *III*

· **Environmental hazards:**
· **Marine pollutant:** *No*

· **Special precautions for user** *Warning: Flammable liquids*
· **EMS Number:** *F-E,S-D*

(Contd. on page 9)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 4

(Contd. of page 8)

· **Stowage Category**	*A*
· **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code**	*Not applicable.*
· **Transport/Additional information:**	
· **DOT**	
· **Quantity limitations**	*On passenger aircraft/rail: 5 L* *On cargo aircraft only: 60 L*
· **ADR**	
· **Excepted quantities (EQ)**	*Code: E1* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 1000 ml*
· **IMDG**	
· **Limited quantities (LQ)**	*1L*
· **Excepted quantities (EQ)**	*Code: E2* *Maximum net quantity per inner packaging: 30 ml* *Maximum net quantity per outer packaging: 500 ml*
· **UN "Model Regulation":**	*UN 1987 ALCOHOLS, N.O.S. (METHANOL), 3, III*

15 Regulatory information

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

7732-18-5	*Water*		*70.0%*
67-56-1	*methanol*	*Flam. Liq. 2, H225* *Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331* *STOT SE 1, H370*	*30.0%*

· **Sara**

· **Section 355 (extremely hazardous substances):**

None of the ingredients is listed.

· **Section 313 (Specific toxic chemical listings):**

67-56-1	*methanol*

· **TSCA (Toxic Substances Control Act):**

67-56-1	*methanol*
7732-18-5	*Water*

· **Proposition 65**

· **Chemicals known to cause cancer:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients is listed.

· **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients is listed.

(Contd. on page 10)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 4

(Contd. of page 9)

· **Chemicals known to cause developmental toxicity:**

67-56-1	methanol

· **Cancerogenity categories**

· **EPA (Environmental Protection Agency)**

None of the ingredients is listed.

· **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients is listed.

· **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients is listed.

· **National regulations:**

· **Information about limitation of use:**
Workers are not allowed to be exposed to this hazardous material. Exceptions can be made by the authorities in certain cases.

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.
· **Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

16 Other information

Disclaimer
The information provided in this Material Safety Data Sheet is based on our present knowledge, and believed to be correct at the date of publication. However, no representation is made concerning its accuracy and completeness. It is intended as guidance only, and is not to be considered a warranty or quality specification. All materials may present unknown hazards, and should be used with caution. Although certain hazards are described, we cannot guarantee that these are the only hazards which exist. PerkinElmer shall not be held liable for any damage resulting from handling or from contact with the product.

· **Department issuing SDS:** Environmental, Health and Safety
· **Contact:**
Within the USA: 1-(800)-762-4000
Outside the USA: 1-(203)-712-8488
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
ACGIH: American Conference of Governmental Industrial Hygienists
EINECS: European Inventory of Existing Commercial Chemical Substances
ELINCS: European List of Notified Chemical Substances
CAS: Chemical Abstracts Service (division of the American Chemical Society)
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
VOC: Volatile Organic Compounds (USA, EU)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
NIOSH: National Institute for Occupational Safety

(Contd. on page 11)

acc. to OSHA HCS

Printing date 08/28/2018 *Review date 08/28/2018*

Trade name: Altus™ HPLC Absorbance PQ Test Solution 4

(Contd. of page 10)

OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
BEI: Biological Exposure Limit
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity – Category 3
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
· **** Data compared to the previous version altered.***