


EXTRACTION BUFFER, PH NBS AMINO ACIDS AND ACYLCARNITINES FROM DRIED BLOOD SPOTS SAFETY DATA SHEET

according to Regulation (EC) No. 1907/2006

1. Identification of the substance/mixture and of the company/undertaking

Product name	EXTRACTION BUFFER, PH NBS AMINO ACIDS AND ACYLCARNITINES FROM DRIED BLOOD SPOTS
<i>Order. No(s).</i>	-
Identified uses	Product for diagnostic use
company/undertaking Identification	Paya Hamsan Technologies, Chamran Building, Azad University, Daneshgah Blvd., Arak, Iran Tel-Fax: +98 86 33670011 Email: info@phtech.ir

2. Hazards identification

Classification of the substance or mixture	according to Regulation (EC) No 1272/2008 (CLP) Flammable liquids (Category 2), H225 acute toxicity - oral (Category 3), H301 acute toxicity - dermal (Category 3), H311 acute toxicity - inhal. (Category 3), H331 specific target organ toxicity - single exposure (Category 1), H370
Label Elements	Labelling according to Regulation (EC) No 1272/2008 (CLP)
<i>Pictograms</i>	
<i>Signal word</i>	DANGER!
<i>Hazard statements</i>	H225 Highly flammable liquid and vapour. H301+H311+H331 Toxic if swallowed, in contact with skin or if inhaled. H370 Causes damage to organs.
<i>Precautionary statements</i>	P210 Keep away from heat. No smoking. P260 Do not breathe dusts or mists. P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/... P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor. P308+P311 IF exposed or concerned: Call a POISON

CENTER/doctor.
P370+P378 In case of fire: Use sand, carbon dioxide or powder extinguisher to extinguish.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P403+P235 Store in a well-ventilated place. Keep cool.


Hazardous ingredients for labelling methanol

Other hazards No data available.

3. Composition/information on ingredients

Substance's synonyms methanol

Formula CH₃OH
CAS No. 67-56-1
EC No. 200-659-6

Name of substance	Identifier	Wt%	Classification acc. to GHS	Pictograms
methanol	CAS No 67-56-1 EC No 200-659-6	≥ 90	Flam. Liq. 2 / H225 Acute Tox. 3 / H301 Acute Tox. 3 / H311 Acute Tox. 3 / H331 STOT SE 1 / H370	

Name of substance	Specific Conc. Limits	M-Factors	ATE	Exposure route
methanol	STOT SE 1; H370: C ≥ 10 % STOT SE 2; H371: 3 % ≤ C < 10 %	-	100 mg/kg	methanol

4. First aid measures

Description of first aid measures

General Do not leave affected person unattended. Remove victim out of the danger area. Keep affected person warm, still and covered. Take off immediately all contaminated clothing. In all cases of doubt, or when symptoms persist, seek medical advice. In case of unconsciousness place person in the recovery position. Never give anything by mouth.

Inhalation If breathing is irregular or stopped, immediately seek medical assistance and start first aid actions. Provide fresh air.

Skin contact Wash with plenty of soap and water.

Eye contact Remove contact lenses, if present and easy to do. Continue rinsing. Irrigate copiously with clean, fresh water for at least 10 minutes, holding the eyelids apart.

<i>Ingestion</i>	Rinse mouth with water (only if the person is conscious). Do NOT induce vomiting.
Most important symptoms and effects, both acute and delayed	Symptoms and effects are not known to date.
Indication of any immediate medical attention and special treatment needed	None

5. Firefighting measures

Extinguishing media	<i>Suitable extinguishing media:</i> Water spray, Alcohol resistant foam, BC-powder, Carbon dioxide (CO ₂) <i>Unsuitable extinguishing media:</i> Water jet
Special hazards arising from the substance	In case of insufficient ventilation and/or in use, may form flammable/explosive vapor-air mixture. Solvent vapors are heavier than air and may spread along floors. Places which are not ventilated, e.g., unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures.
<i>Hazardous combustion products</i>	Carbon monoxide (CO), Carbon dioxide (CO ₂)
Advice for firefighters	In case of fire and/or explosion do not breathe fumes. Coordinate firefighting measures to the fire surroundings. Do not allow firefighting water to enter drains or water courses. Collect contaminated firefighting water separately. Fight fire with normal precautions from a reasonable distance.

6. Accidental release measures

Personal precautions	<i>For non-emergency personnel:</i> Remove persons to safety. <i>For emergency responders:</i> Wear breathing apparatus if exposed to vapors/dust/spray/gases.
Environmental precautions	Keep away from drains, surface and ground water. Retain contaminated washing water and dispose of it.
Methods for containment and cleaning up	<i>Advice on how to contain a spill:</i> Covering of drains <i>Advice on how to clean up a spill:</i> Wipe up with absorbent material (e.g. cloth, fleece). Collect spillage: sawdust, kieselguhr (diatomite), sand, universal binder <i>Appropriate containment techniques:</i> Use of adsorbent materials. <i>Other information relating to spills and releases:</i> Place in

appropriate containers for disposal. Ventilate affected area.

Reference to other sections

Hazardous combustion products: see section 5. Personal protective equipment: see section 8. Incompatible materials: see section 10. Disposal considerations: see section 13.

7. Handling and storage

Handling

Recommendations

- Measures to prevent fire as well as aerosol and dust generation: Use local and general ventilation. Avoidance of ignition sources. Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. Use only in well-ventilated areas. Due to danger of explosion, prevent leakage of vapors into cellars, flues and ditches. Ground/bond container and receiving equipment. Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools.
- Specific notes/details: Places which are not ventilated, e.g. unventilated below ground level areas such as trenches, conduits and shafts, are particularly prone to the presence of flammable substances or mixtures. Vapors are heavier than air, spread along floors and form explosive mixtures with air. Vapors may form explosive mixtures with air.

Advice on general occupational hygiene

Wash hands after use. Do not eat, drink and smoke in work areas. Remove contaminated clothing and protective equipment before entering eating areas. Never keep food or drink in the vicinity of chemicals. Never place chemicals in containers that are normally used for food or drink. Keep away from food, drink and animal feeding stuffs.

Storage

Managing of associated risks

- Explosive atmospheres: Keep container tightly closed and in a well-ventilated place. Use local and general ventilation. Keep cool. Protect from sunlight.
- Flammability hazards: Keep away from sources of ignition - No smoking. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Take precautionary measures against static discharge. Protect from sunlight.

Control of effects

Protect from sunlight. Protect from moisture.

- Ventilation requirements: Keep any substance that emits harmful vapors or gases in a place that allows these to be permanently extracted. Use local and general ventilation. Ground/bond container and receiving equipment.
- Packaging compatibilities: Only packaging which are

approved (e.g. acc. to ADR) may be used.

Specific end use(s)

See section 16 for a general overview.

8. Exposure controls/personal protection

Control parameters

Occupational exposure limit values (Workplace Exposure Limits)											
Country	Name of agent	CAS No	Identifier	TWA [ppm]	TWA [mg/ m ³]	STEL [ppm]	STEL [mg/ m ³]	Ceiling-C [ppm]	Ceiling-C [mg/ m ³]	Notation	Source
EU	methanol	67-56-1	IOEL V	200	260						2006/15/EC
GB	methanol	67-56-1	WEL	200	266	250	333				EH40/2005

Relevant DNELs of components of the mixture						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
methanol	67-56-1	DNEL	260 mg/m ³	human, inhalatory	worker (industry)	acute - local effects
methanol	67-56-1	DNEL	40 mg/kg	human, dermal	worker (industry)	acute - systemic effects
methanol	67-56-1	DNEL	260 mg/m ³	human, inhalatory	worker (industry)	acute - systemic effects
methanol	67-56-1	DNEL	260 mg/m ³	human, inhalatory	worker (industry)	chronic - local effects
methanol	67-56-1	DNEL	40 mg/kg	human, dermal	worker (industry)	chronic - systemic effects
methanol	67-56-1	DNEL	260 mg/m ³	human, inhalatory	worker (industry)	chronic - systemic effects

Relevant PNECs of components of the mixture						
Name of substance	CAS No	Endpoint	Threshold level	Protection goal, route of exposure	Used in	Exposure time
methanol	67-56-1	PNEC	100 mg/l	microorganisms	sewage treatment plant (STP)	short-term (single instance)
methanol	67-56-1	PNEC	77 mg/kg	benthic organisms	sediments	short-term (single instance)
methanol	67-56-1	PNEC	7.7 mg/kg	pelagic organisms	sediments	short-term (single instance)
methanol	67-56-1	PNEC	20.8 mg/l	aquatic organisms	freshwater	short-term (single instance)
methanol	67-56-1	PNEC	2.08 mg/l	aquatic organisms	marine water	short-term (single instance)
methanol	67-56-1	PNEC	100 mg/l	aquatic organisms	sewage treatment plant (STP)	short-term (single instance)
methanol	67-56-1	PNEC	77 mg/kg	aquatic organisms	freshwater sediment	short-term (single instance)
methanol	67-56-1	PNEC	7.7 mg/kg	aquatic organisms	marine sediment	short-term (single instance)
methanol	67-56-1	PNEC	3.18 mg/kg	terrestrial organisms	soil	short-term (single instance)
methanol	67-56-1	PNEC	1,540 mg/l	aquatic organisms	water	intermittent re-lease

Exposure controls

Appropriate engineering controls: General ventilation.

Individual protection measures (personal protective equipment) Eye/face protection: Wear eye/face protection.

Skin protection

- Hand protection

Wear suitable gloves. Chemical protection gloves are suitable, which are tested according to EN 374. Check leak-tightness/impermeability prior to use. In the case of wanting to use the gloves again, clean them before taking off and air them well. For special purposes, it is recommended to check the resistance to chemicals of the protective gloves mentioned above together with the supplier of these gloves.

- Other protection measures

Take recovery periods for skin regeneration. Preventive skin protection (barrier creams/ointments) is recommended. Wash hands thoroughly after handling.

Respiratory protection

In case of inadequate ventilation wear respiratory protection.

Environmental exposure controls

Use appropriate container to avoid environmental contamination. Keep away from drains, surface and ground water.

9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	information on this property is not available
Melting/freezing point	not determined
Boiling point, boiling range	64.7 °C at 1,013 hPa (calculated value, referring to a component of the mixture)
Flammability	flammable liquid in accordance with GHS criteria
Lower, upper explosion limit	5.5 vol% - 44 vol%
Flash point	9.7 °C at 1,013 hPa (calculated value, referring to a component of the mixture)
Auto-ignition temperature	455 °C
Decomposition temperature	not relevant

pH (value)	3 (13.8 °C)
Kinematic viscosity	not determined
Water solubility	miscible in any proportion
Partition coefficient n-octanol/water (log value)	this information is not available
Vapor pressure	169.3 hPa at 25 °C (calculated value, referring to a component of the mixture)
Density	0.792 g/ml (calculated value)
Particle characteristics	no data available
Information with regard to physical hazard classes	there is no additional information
Miscibility	Completely miscible with water.
Solvent content	99 %
Solid content	0 %
Temperature class (EU, acc. to ATEX)	T1 (maximum permissible surface temperature on the equipment: 450°C)

10. Stability and reactivity

Reactivity	Concerning incompatibility: see below "Conditions to avoid" and "Incompatible materials". The mixture contains re- active substance(s). Risk of ignition. If heated: Risk of ignition
Chemical stability	See below "Conditions to avoid".
Possibility of hazardous reactions	No known hazardous reactions.
Conditions to avoid	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. <i>Hints to prevent fire or explosion</i> Use explosion-proof electrical/ventilating/lighting/equipment. Use only non-sparking tools. Take precautionary measures against static discharge.
Incompatible materials	Oxidizers.
Hazardous decomposition products	Reasonably anticipated hazardous decomposition products produced as a result of use, storage, spill and heating are not known. Hazardous combustion products: see section 5.

11. Toxicological information

Information on hazard classes

Test data are not available for the complete mixture.
Classification procedure
The method for classification of the mixture is based on ingredients of the mixture (additivity formula).

Classification according to GHS (1272/2008/EC, CLP)

Acute toxicity: Toxic if swallowed. Toxic in contact with skin. Toxic if inhaled.
Acute toxicity estimate (ATE):
Oral: 101 mg/kg
Dermal: 303 mg/kg
Inhalation (vapor): 3.03 mg/l/4h

Acute toxicity estimate (ATE) of components of the mixture			
Name of substance	CAS No	Exposure route	ATE
methanol	67-56-1	oral	100 mg/kg
methanol	67-56-1	dermal	300 mg/kg
methanol	67-56-1	inhalation: vapor	3 mg/l/4h

Skin corrosion/irritation

Shall not be classified as corrosive/irritant to skin.

Serious eye damage/eye irritation

Shall not be classified as seriously damaging to the eye or eye irritant.

Respiratory or skin sensitization

Shall not be classified as a respiratory or skin sensitizer.

Germ cell mutagenicity

Shall not be classified as germ cell mutagenic.

Carcinogenicity

Shall not be classified as carcinogenic.

Reproductive toxicity

Shall not be classified as a reproductive toxicant.

Specific target organ toxicity (single exposure)

Causes damage to organs.

Specific target organ toxicity (repeated exposure)

Shall not be classified as a specific target organ toxicant (repeated exposure).

Aspiration hazard

Shall not be classified as presenting an aspiration hazard.

Information on other hazards

There is no additional information.

12. Ecological information

Toxicity	Shall not be classified as hazardous to the aquatic environment.
Persistence and degradability	Data are not available.
Bio accumulative potential	Data are not available.
Mobility in soil	No data available.
Results of PBT and vPvB assessment	No data available.
Endocrine disrupting properties	No data available.
Other adverse effects	No data available.




13. Disposal considerations

Waste treatment methods	<p><i>Waste treatment-relevant information</i> Solvent reclamation/regeneration.</p> <p><i>Sewage disposal-relevant information</i> Do not empty into drains. Avoid release to the environment. Refer to special instructions/safety data sheets.</p> <p><i>Waste treatment of containers/packaging</i> It is a dangerous waste; only packaging which are approved (e.g. acc. to ADR) may be used. Completely emptied packages can be recycled. Handle contaminated packages in the same way as the substance itself.</p>
<i>Relevant provisions relating to waste</i>	List of wastes: 16 05 06*: Laboratory chemicals, consisting of or containing hazardous substances, including mixtures of laboratory chemicals
<i>Remarks</i>	Please consider the relevant national or regional provisions. Waste shall be separated into the categories that can be handled separately by the local or national waste management facilities.

14. Transport information

UN number	ADR/RID/ADN	UN 1230
	IMDG-Code	UN 1230
	ICAO-TI	UN 1230

UN proper shipping name	ADR/RID/AND	METHANOL
	IMDG-Code	METHANOL
	ICAO-TI	Methanol
Transport hazard class(s)	ADR/RID/ADN	3 (6.1)
	IMDG-Code	3 (6.1)
	ICAO-TI	3 (6.1)
Packaging group	ADR/RID/AND	II
	IMDG-Code	II
	ICAO-TI	II
Environmental hazards	none non-environmentally hazardous acc. to the dangerous goods regulations	
Special precautions for users	Provisions for dangerous goods (ADR) should be complied within the premises.	
Maritime transport in bulk according to IMO instruments	The cargo is not intended to be carried in bulk.	

Acute toxicity estimate (ATE) of components of the mixture - Additional information	
Particulars in the transport document	UN1230, METHANOL, 3 (6.1), II, (D/E)
Classification code	FT1
Danger label(s)	 3+6.1
Special provisions (SP)	279, 802(ADN)
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
Transport category (TC)	2
Tunnel restriction code (TRC)	D/E
Hazard identification No	336
Emergency Action Code	2WE
International Maritime Dangerous Goods Code (IMDG) - Additional information	
Particulars in the shipper's declaration	UN1230, METHANOL, 3 (6.1), II, 9.7°C c.c.
Marine pollutant	-
Danger label(s)	 3+6.1
Special provisions (SP)	279
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
EmS	F-E, S-D
Stowage category	B
International Civil Aviation Organization (ICAO-IATA/DGR) - Additional information	
Particulars in the shipper's declaration	UN1230, Methanol, 3 (6.1), II
Danger label(s)	 3+6.1
Special provisions (SP)	A113
Excepted quantities (EQ)	E2
Limited quantities (LQ)	1 L
ERG Code	3 L

15. Regulatory information

Safety, health and environmental regulations/legislation

Deco-Paint Directive (2004/42/EC)
VOC content: 99 %
Directive on industrial emissions (VOCs, 2010/75/EU)
VOC content: 99 %

Chemical Safety Assessment

Chemical safety assessments for substances in this mixture were not carried out.

16. Other information

Abbreviations and acronyms	
Abbr.	Descriptions of used abbreviations
2006/15/EC	Commission Directive establishing a second list of indicative occupational exposure limit values in implementation of Council Directive 98/24/EC and amending Directives 91/322/EEC and 2000/39/EC
Acute Tox.	Acute toxicity
AND	European Agreement concerning the International Carriage of Dangerous Goods by In-land Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ADR/RID/ADN	European Agreements concerning the International Carriage of Dangerous Goods by Road/Rail/Inland Waterways (ADR/RID/ADN)
ATE	Acute Toxicity Estimate
CAS	Chemical Abstracts Service (service that maintains the most comprehensive list of chemical substances)
Ceiling-C	Ceiling value
CLP	Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures
DGR	Dangerous Goods Regulations (see IATA/DGR)
DNEL	Derived No-Effect Level
EC No	The EC Inventory (EINECS, ELINCS and the NLP-list) is the source for the seven-digit EC number, an identifier of substances commercially available within the EU (European Union)
EH40/2005	EH40/2005 Workplace exposure limits (http://www.nationalarchives.gov.uk/doc/open-government-licence/)
EINECS	European Inventory of Existing Commercial Chemical Substances
ELINCS	European List of Notified Chemical Substances
EmS	Emergency Schedule
ERG Code	Emergency Response Guidance - Code
Flam. Liq.	Flammable liquid
GHS	"Globally Harmonized System of Classification and Labelling of Chemicals" developed by the United Nations
IATA	International Air Transport Association
IATA/DGR	Dangerous Goods Regulations (DGR) for the air transport (IATA)
ICAO	International Civil Aviation Organization
ICAO-TI	Technical instructions for the safe transport of dangerous goods by air
IMDG	International Maritime Dangerous Goods Code
IMDG-Code	International Maritime Dangerous Goods Code
index No	The Index number is the identification code given to the substance in Part 3 of Annex VI to Regulation (EC) No 1272/2008
IOELV	Indicative occupational exposure limit value
NLP	No-Longer Polymer
PBT	Persistent, Bio accumulative and Toxic
PNEC	Predicted No-Effect Concentration
Ppm	Parts per million
REACH	Registration, Evaluation, Authorization and Restriction of Chemicals

RID	Regulations concerning the international carriage of Dangerous goods by Rail
STEL	Short-term exposure limit
STOT SE	Specific target organ toxicity - single exposure
TWA	Time-weighted average
VOC	Volatile Organic Compounds
VPvB	Very Persistent and very Bio accumulative
WEL	Workplace exposure limit

Abbreviations and acronyms	
Code	Text
H225	Highly flammable liquid and vapour.
H301	Toxic if swallowed.
H311	Toxic in contact with skin.
H331	Toxic if inhaled.
H370	Causes damage to organs.

Disclaimer

The information in this document is based on the best of our knowledge and shall be used only as a guide. The information given is designed for safe use, handling, storage, transportation and disposal. It does not represent any guarantee of the quality of the product.