Safety data sheet
according to 1907/2006/EC, Article 31

Printing 18.05.2021 *version number 36* *Revision: 14.07.2020*

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

***1.1 Product identifier**
***Trade name: 0.1M TETRABUTYLAMMONIUM HYDROXIDE**

***Article number:** 3008300
***Registration number**
A registration number is not available for this substance as the substance or its uses are exempted from registration, the annual tonnage does not require a registration or the registration is envisaged for a later registration deadline.
***1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
***Application of the substance / the mixture** Laboratory Chemicals

***1.3 Details of the supplier of the safety data sheet**
***Manufacturer/Supplier:**
Reagecon Diagnostics Ltd.
Shannon Free Zone,
Shannon,
Co. Clare,
Ireland.
Tel +353 61 472622
Fax +353 61 472642

***Further information obtainable by contacting:** sds@reagecon.ie
***1.4 Emergency telephone number:**
For Hazardous Materials [or Dangerous Goods] Incident
Spill, Leak, Fire, Exposure, or Accident
Call CHEMTREC
For Ireland call +(353)-19014670
For Outside Ireland call +1 703-741-5970 / 1-800-424-9300 CCN849800

SECTION 2: Hazards identification

***2.1 Classification of the substance or mixture**
***Classification according to Regulation (EC) No 1272/2008**

GHS02 flame

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

GHS08 health hazard

Repr. 2	H361d	Suspected of damaging the unborn child.
STOT SE 2	H371	May cause damage to the central nervous system and the visual organs.
STOT RE 2	H373	May cause damage to organs through prolonged or repeated exposure.
Asp. Tox. 1	H304	May be fatal if swallowed and enters airways.

GHS05 corrosion

Skin Corr. 1B	H314	Causes severe skin burns and eye damage.
Eye Dam. 1	H318	Causes serious eye damage.

GHS07

STOT SE 3	H336	May cause drowsiness or dizziness.

(Contd. on page 2)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing 18.05.2021 *version number 36* *Revision: 14.07.2020*

Trade name: 0.1M TETRABUTYLAMMONIUM HYDROXIDE

(Contd. of page 1)

***2.2 Label elements**

***Labelling according to Regulation (EC) No 1272/2008**

The product is classified and labelled according to the CLP regulation.

***Hazard pictograms**

GHS02 GHS05 GHS08 GHS07

***Signal word** Danger

***Hazard-determining components of labelling:**

TOLUENE
tetrabutylammonium hydroxide
METHANOL

***Hazard statements**

H225 Highly flammable liquid and vapour.
H314 Causes severe skin burns and eye damage.
H361d Suspected of damaging the unborn child.
H371 May cause damage to the central nervous system and the visual organs.
H336 May cause drowsiness or dizziness.
H373 May cause damage to organs through prolonged or repeated exposure.
H304 May be fatal if swallowed and enters airways.

***Precautionary statements**

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.
P301+P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
P321 Specific treatment (see on this label).
P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P405 Store locked up.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

***2.3 Other hazards**

***Results of PBT and vPvB assessment**

***PBT:** Not applicable.

***vPvB:** Not applicable.

SECTION 3: Composition/information on ingredients

***3.2 Chemical characterisation: Mixtures**

***Description:** Mixture of substances listed below with nonhazardous additions.

***Dangerous components:**		
CAS: 108-88-3 EINECS: 203-625-9	TOLUENE Flam. Liq. 2, H225; Repr. 2, H361d; STOT RE 2, H373; Asp. Tox. 1, H304; Skin Irrit. 2, H315; STOT SE 3, H336	50-100%
CAS: 2052-49-5 EINECS: 218-147-6	tetrabutylammonium hydroxide Skin Corr. 1B, H314	≥5-≤10%
CAS: 67-56-1 EINECS: 200-659-6	METHANOL Flam. Liq. 2, H225; Acute Tox. 3, H301; Acute Tox. 3, H311; Acute Tox. 3, H331; STOT SE 1, H370	≥3-<10%

(Contd. on page 3)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing 18.05.2021 version number 36 Revision: 14.07.2020

Trade name: 0.1M TETRABUTYLAMMONIUM HYDROXIDE

(Contd. of page 2)

***Additional information:** For the wording of the listed hazard phrases refer to section 16.

SECTION 4: First aid measures

***4.1 Description of first aid measures**
***General information:**
Immediately remove any clothing soiled by the product.
Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.
***After inhalation:**
Provide fresh air, warmth and rest. When breathing is difficult, properly trained personnel may assist affected person by administering oxygen. Obtain medical attention if any discomfort continues.
In case of unconsciousness place patient stably in side position for transportation.
***After skin contact:**
Remove contaminated clothing and rinse skin thoroughly with water. Get medical attention if any discomfort continues.
***After eye contact:**
Promptly wash eyes with plenty of water for up to 15 minutes. Open eyes wide apart and rinse well to remove any contact lenses. Do not remove contact lenses by hand. Get medical attention. Continue to rinse.
***After swallowing:**
Drink plenty of water and provide fresh air. Call for a doctor immediately.
Do not induce vomiting; call for medical help immediately. Rinse mouth thoroughly with water and give large amounts of water to drink. Never give anything by mouth to an unconscious person.
Caution if victim vomits. Risk of aspiration. Keep airways free. Call a physician immediately.
***4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
***4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

SECTION 5: Firefighting measures

***5.1 Extinguishing media**
***Suitable extinguishing agents:** CO2, sand, extinguishing powder. Do not use water.
***For safety reasons unsuitable extinguishing agents:**
Water
Water with full jet
***5.2 Special hazards arising from the substance or mixture** No further relevant information available.
***5.3 Advice for firefighters**
***Protective equipment:** Mount respiratory protective device.

SECTION 6: Accidental release measures

***6.1 Personal precautions, protective equipment and emergency procedures**
Wear protective equipment as described in Section 8 below. Keep unprotected persons away.
***6.2 Environmental precautions:**
Prevent seepage into sewage system, workpits and cellars.
Do not allow to enter sewers/ surface or ground water.
***6.3 Methods and material for containment and cleaning up:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralising agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.
Do not flush with water or aqueous cleansing agents
***6.4 Reference to other sections**
See Section 7 for information on safe handling.
See Section 8 for information on personal protection equipment.

(Contd. on page 4)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing 18.05.2021 *version number 36* *Revision: 14.07.2020*

Trade name: 0.1M TETRABUTYLAMMONIUM HYDROXIDE

(Contd. of page 3)

See Section 13 for disposal information.

SECTION 7: Handling and storage

***7.1 Precautions for safe handling**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
***Information about fire - and explosion protection:**
Keep ignition sources away - Do not smoke.
Protect against electrostatic charges.

***7.2 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.
***7.3 Specific end use(s)** No further relevant information available.*

SECTION 8: Exposure controls/personal protection

***8.1 Control parameters**
***Engineering Controls:** No further data; see item 7.*

***Ingredients with limit values that require monitoring at the workplace:**	
***CAS: 108-88-3 TOLUENE**	
WEL	*Short-term value: 384 mg/m³, 100 ppm* *Long-term value: 191 mg/m³, 50 ppm* *Sk*
***CAS: 67-56-1 METHANOL**	
WEL	*Short-term value: 333 mg/m³, 250 ppm* *Long-term value: 266 mg/m³, 200 ppm* *Sk*

***Additional information:** The lists valid during the making were used as basis.*

***8.2 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.
Do not inhale gases / fumes / aerosols.
Avoid contact with the eyes and skin.
***Respiratory protection:**
In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.
Where risk assessment shows air-purifying respirators are appropriate use a respirator with multi-purpose combination (US) or type ABEK (EN14387) respirator cartridges as back up to engineering controls. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

(Contd. on page 5)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing 18.05.2021 version number 36 Revision: 14.07.2020

Trade name: 0.1M TETRABUTYLAMMONIUM HYDROXIDE

(Contd. of page 4)

***Protection of hands:**

Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
Always ensure that gloves are inspected before use.
Selection of protective gloves must include consideration of the penetration times along with rates of diffusion and degradation. The selected glove should comply with the specifications of EU Directive 89/686/EEC and the standard EN374 derived from it.

***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.
Fluorocarbon rubber (Viton) gloves are recommended for splash contact.

This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific use scenario.
Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices.
Wash and dry hands. The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

Full contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min

Splash contact
Material: Nitrile rubber
Minimum layer thickness: 0.11 mm
Break through time: 480 min

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

***Penetration time of glove material**
In the absence of data above, the exact break through time has to be sourced from the manufacturer of the protective gloves and has to be observed.

***Eye protection:**

Tightly sealed goggles: Use equipment for eye protection tested and approved under appropriate government standards
such as NIOSH (US) or EN 166(EU)

SECTION 9: Physical and chemical properties

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

Form:	*Liquid*
Colour:	*According to product specification*
***Odour:**	*Characteristic*

(Contd. on page 6)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing 18.05.2021 version number 36 Revision: 14.07.2020

Trade name: 0.1M TETRABUTYLAMMONIUM HYDROXIDE

(Contd. of page 5)

***Odour threshold:**	Not determined.
***pH-value:**	Not determined.
***Change in condition**	
Melting point/freezing point:	Undetermined.
Initial boiling point and boiling range:	64 °C
***Flash point:**	4 °C
***Flammability (solid, gas):**	Not applicable.
***Ignition temperature:**	455 °C
***Decomposition temperature:**	Not determined.
***Auto-ignition temperature:**	Product is not selfigniting.
***Explosive properties:**	Product is not explosive. However, formation of explosive air/ vapour mixtures are possible.
***Explosion limits:**	
Lower:	1.2 Vol %
Upper:	7 Vol %
***Vapour pressure at 20 °C:**	29 hPa
***Density at 20 °C:**	0.8428 g/cm³
***Relative density**	Not determined.
***Vapour density**	Not determined.
***Evaporation rate**	Not determined.
***Solubility/ 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:	90.0 %
***9.2 Other information**	No further relevant information available.

SECTION 10: Stability and reactivity

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

SECTION 11: Toxicological information

***11.1 Information on toxicological effects**
***Acute toxicity** Based on available data, the classification criteria are not met.

(Contd. on page 7)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing 18.05.2021 version number 36 Revision: 14.07.2020

Trade name: 0.1M TETRABUTYLAMMONIUM HYDROXIDE

(Contd. of page 6)

*LD/LC50 values relevant for classification:		
CAS: 108-88-3 TOLUENE		
Oral	LD50	5,000 mg/kg (rat)
Dermal	LD50	12,124 mg/kg (rabbit)
Inhalative	LC50/4 h	5,320 mg/l (mouse)
CAS: 67-56-1 METHANOL		
Oral	LD50	13,000 mg/kg (rat)

***Primary irritant effect:**
***Skin corrosion/irritation**
Causes severe skin burns and eye damage.
***Serious eye damage/irritation**
Causes serious eye damage.
***Respiratory or skin sensitisation** Based on available data, the classification criteria are not met.
***Additional toxicological information:**
***CMR effects (carcinogenity, mutagenicity and toxicity for reproduction)**
***Germ cell mutagenicity** Based on available data, the classification criteria are not met.
***Carcinogenicity** Based on available data, the classification criteria are not met.
***Reproductive toxicity**
Suspected of damaging the unborn child.
***STOT-single exposure**
May cause damage to the central nervous system and the visual organs.
May cause drowsiness or dizziness.
***STOT-repeated exposure**
May cause damage to organs through prolonged or repeated exposure.
***Aspiration hazard**
May be fatal if swallowed and enters airways.

SECTION 12: Ecological information

***12.1 Toxicity**
***Aquatic toxicity:** No further relevant information available.
***12.2 Persistence and degradability** No further relevant information available.
***12.3 Bioaccumulative potential** No further relevant information available.
***12.4 Mobility in soil** No further relevant information available.
***Additional ecological information:**
***General notes:**
Water hazard class 3 (German Regulation) (Self-assessment): extremely hazardous for water
Do not allow product to reach ground water, water course or sewage system.
Must not reach sewage water or drainage ditch undiluted or unneutralised.
Danger to drinking water if even small quantities leak into the ground.
***12.5 Results of PBT and vPvB assessment**
***PBT:** Not applicable.
***vPvB:** Not applicable.
***12.6 Other adverse effects** No further relevant information available.

SECTION 13: Disposal considerations

***13.1 Waste treatment methods**
***Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.

*European waste catalogue	
HP3	Flammable
HP5	Specific Target Organ Toxicity (STOT)/Aspiration Toxicity

(Contd. on page 8)

(Contd. of page 7)

HP6	Acute Toxicity
HP8	Corrosive
HP10	Toxic for reproduction

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

SECTION 14: Transport information

***14.1 UN-Number**
***ADR, IMDG, IATA** UN3286

***14.2 UN proper shipping name**
***ADR** 3286 FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (TOLUENE, tetrabutylammonium hydroxide)
2924 FLAMMABLE LIQUID, CORROSIVE, N.O.S. (TOLUENE, tetrabutylammonium hydroxide)
***IMDG, IATA** FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (TOLUENE, tetrabutylammonium hydroxide)

***14.3 Transport hazard class(es)**

***ADR**

***Class** 3 Flammable liquids.
***Label** 3+6.1+8

***IMDG**

***Class** 3 Flammable liquids.
***Label** 3/6.1/8

***IATA**

***Class** 3 Flammable liquids.
***Label** 3 (6.1, 8)

***14.4 Packing group**
***ADR, IMDG, IATA** II

***14.5 Environmental hazards:**
***Marine pollutant:** No

***14.6 Special precautions for user** Warning: Flammable liquids.
***Hazard identification number (Kemler code):** 368
***EMS Number:** F-E,S-C
***Stowage Category** B
***Stowage Code** SW2 Clear of living quarters.

(Contd. on page 9)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing 18.05.2021 *version number 36* *Revision: 14.07.2020*

Trade name: 0.1M TETRABUTYLAMMONIUM HYDROXIDE

(Contd. of page 8)

***Segregation Code**	SG5 Segregation as for class 3 SG8 Stow "away from" class 4.1
***14.7 Transport in bulk according to Annex II of Marpol and the IBC Code**	Not applicable.
***Transport/Additional information:**	
***ADR**	
***Limited quantities (LQ)**	1L
***Transport category**	2
***Tunnel restriction code**	D/E
***UN "Model Regulation":**	UN 3286 FLAMMABLE LIQUID, TOXIC, CORROSIVE, N.O.S. (TOLUENE, TETRABUTYLAMMONIUM HYDROXIDE), 3 (6.1+8), II

SECTION 15: Regulatory information

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

***Directive 2012/18/EU**
***Named dangerous substances - ANNEX I** None of the ingredients is listed.
***Seveso category** P5c FLAMMABLE LIQUIDS
***Qualifying quantity (tonnes) for the application of lower-tier requirements** 5,000 t
***Qualifying quantity (tonnes) for the application of upper-tier requirements** 50,000 t
***REGULATION (EC) No 1907/2006 ANNEX XVII** Conditions of restriction: 3, 48, 69

***DIRECTIVE 2011/65/EU on the restriction of the use of certain hazardous substances in electrical and electronic equipment – Annex II**

None of the ingredients is listed.

***National regulations:**

***Breakdown regulations:**

Class	Share in %
I	9.0
NK	81.0

***Waterhazard class:** Water hazard class 3 (Self-assessment):extremely hazardous for water.
***15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

***Relevant Phrases:**
H225 Highly flammable liquid and vapour.
H301 Toxic if swallowed.
H304 May be fatal if swallowed and enters airways.
H311 Toxic in contact with skin.
H314 Causes severe skin burns and eye damage.
H315 Causes skin irritation.
H331 Toxic if inhaled.
H336 May cause drowsiness or dizziness.
H361d Suspected of damaging the unborn child.
H370 Causes damage to organs.
H373 May cause damage to organs through prolonged or repeated exposure.

(Contd. on page 10)

Safety data sheet
according to 1907/2006/EC, Article 31

Printing 18.05.2021 *version number 36* *Revision: 14.07.2020*

Trade name: 0.1M TETRABUTYLAMMONIUM HYDROXIDE

(Contd. of page 9)

***Department issuing SDS:** Health and Safety*
***Contact:** sds@reagecon.ie*
Abbreviations and acronyms:
RID: Règlement international concernant le transport des marchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
ICAO: International Civil Aviation Organisation
REACH (Registration, Evaluation, Authorisation and restriction of Chemicals)
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
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
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)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent
PBT: Persistent, Bioaccumulative and Toxic
vPvB: very Persistent and very Bioaccumulative
Flam. Liq. 2: Flammable liquids – Category 2
Acute Tox. 3: Acute toxicity - oral – Category 3
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Skin Irrit. 2: Skin corrosion/irritation – Category 2
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Repr. 2: Reproductive toxicity – Category 2
STOT SE 1: Specific target organ toxicity (single exposure) – Category 1
STOT SE 2: Specific target organ toxicity (single exposure) – Category 2
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
STOT RE 2: Specific target organ toxicity (repeated exposure) – Category 2
Asp. Tox. 1: Aspiration hazard – Category 1