

# Ammonium Hydroxide, 20% v/v (1+4) Safety Data Sheet according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 02/19/2014 Revision date: 11/16/2016 Supersedes: 02/19/2014

Version: 1.1

1.1.       Identification         Product form       :       Mixture         Product rame       :       Ammonium Hydroxide, 20% v/v (1+4)         Product code       :       LC11160         1.2.       Relevant Identified uses of the substance or mixture and uses advised against         Use of the substance/mixture       :       For Iaboratory and manufacturing use only         1.3.       Details of the subpler of the safety data sheet       Iabchom in         LacChem inc       :       For Iaboratory and manufacturing use only         1.4.       Emergency Islephone number       :         Emergency Islephone number       :       CHEMTEC: 1-800-424-9300 or 011-703-527-3887         ESCTION 2: Hazard(s) Identification       :       CHEMTEC: 1-800-424-9300 or 011-703-527-3887         ESCTION 2: Hazard(s) Identification       :       :         Product and against in the substance or mixture       :       :         CHSISICation of the substance or mixture       :       :		
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Product code       : LC11160         1.2. Relevant identified uses of the substance or mixture and uses advised against         Use of the substance/mixture       : For laboratory and manufacturing use only         1.3. Details of the supplier of the safety data sheet         LabChem Inc         LabChements         LabChe	Product form	: Mixture
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13. Details of the supplier of the safety data sheet         .abChem Inc         .abChem Inc         Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court         Zelienopie, PA 16063 - USA         Tat 28-26-2503 - T724-473-0477         Info@Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court         Semegrency number       : CHEMTREC: 1-800-424-9300 or 011-703-527-3887         SECTION 2: Hazard(s) Identification         2.1. Classification of the substance or mixture         ShS-US classification         Sign corresolowing training on Category 1A         H314         4zard outs to the aquatic environment - Acute Hazard Category 2         H401         Signal word (CHS-US)         : Danger         -tazard statements (GHS-US)         : H314 - Causes severe skin burns and eye damage         H401 - Toxic to caquatic life         Precautionary statements (GHS-US)         : P260 - Do not breathe vapors, spray, mist         P280 - Vace protective gloves, eye protection         P301 + P330 + P331 - 11 SWALLOWED: rinse mouth. Do NOT induce vomiting         P303 + P331 - 11 SWALLOWED: rinse mouth. Do NOT induce vomiting         P303 + P331 - P339 - F11 = SWALLOWED: rinse mouth. Do NOT induce vomiting         P301 + P330 - P339 -	1.2. Relevant identified uses of th	e substance or mixture and uses advised against
LabChem Inc Jackows Printe Commerce Park Building 1000, 1010 Jackson's Pointe Court Zeilenopie, PA 16063 - USA 1713-286-5230 - F 724-473.0647 Into@labchem.com - www.labchem.com Emergency telephone number Emergency telephone number Et CHEMTREC: 1-800-424-9300 or 011-703-527-3887 SECTION 2: Hazard(s) Identification 21. Classification of the substance or mixture CHS-US classification Skin corrosion/irritation Category 1A Hazardous to the aquatic environment - Acute Hazard Category 2 H401 Full text of H statements : see section 16 22. Label elements CHS-US labeling Hazard pictograms (GHS-US) Signal word (GHS-US) Hazard pictograms (GHS-US) Figual word (GHS-US) Hazard statements (GHS-US) Figual word (GHS-US) Hazard statements (GHS-US) Figual word (GHS-US) Hazard statements (GHS-US) Figual word (GHS-US) Hazard statements (GHS-US) Hazard statements (GHS-US) Figual word (GHS-US) Hazard statements (GHS-US) Figual word (GHS-US) Hazard statements (GHS-US	Use of the substance/mixture	: For laboratory and manufacturing use only
Jackson's Pointe Commerce Park Building 1000, 1010 Jackson's Pointe Court Zeilengope, PA 16083 - USA 1412-826-5230 - F 724-473-0647 inde@labchem.com - www.labchem.com 14.0 Emergency telephone number Emergency number : CHEMTREC: 1-800-424-9300 or 011-703-527-3887 SECTION 2: Hazard(s) identification Statistication of the substance or mixture 2.1. Classification of the substance or mixture SHS-US classification SHS-US classification of the substance or mixture CHEMTREC: 1-800-424-9300 or 011-703-527-3887 SECTION 2: Hazard(s) identification SHS-US classification SHS-US classification SHS-US classification SHS-US classification SHS-US classification SHS-US tabeling 4zard pictograms (GHS-US) Signal word (GHS-US) - Gisos Signal word (GHS-US) - H314 - Causes severe skin burns and eye damage H401 - Toxic to aquatic life Precautionary statements (GHS-US) - P260 - Don breathe vapors, spray, mist P264 - Wash exposed skin throroughly after handling P263 - Wal release of the environment P264 - Wash exposed skin throroughly after handling P263 - Wal release to the environment P264 - Wash exposed skin throroughly after handling P263 - P30 - P30 - P33 - P33 - P30 - P33 - P33 - P33 - P30 - P33 - P33 - P33 - P30 - P33	1.3. Details of the supplier of the	safety data sheet
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Skin corrosion/irritation Category 1A       H314         Hazardous to the aquatic environment - Acute Hazard Category 2       H314         Full text of H statements : see section 16       H314         2.2. Label elements       GHS-US labeling         Hazard pictograms (GHS-US)       :       Image: Category 2         GHS05       :       Danger         Signal word (GHS-US)       :       Danger         Hazard statements (GHS-US)       :       H314 - Causes severe skin burns and eye damage H401 - Toxic to aquatic life         Precautionary statements (GHS-US)       :       H264 - Vash exposed skin thoroughly after handling P264 - Wash exposed skin thoroughly after handling P280 - Wear protective gloves, eye protection P333 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P333 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P333 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P333 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P333 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P333 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P333 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P333 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P333 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P333 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting P303 + P333 - IF SWALLOWED: rinse science with water/shower         P303 - P331 - IS WALLOWED: rinse mouth. Do NOT induce vomiting P303 - P333 - IF SWALLOWED: rinse science with water/shower         P303 - IS SWALLOWED: rinse routor/physician P336 - Wash contaminated clot	GHS-US classification	
GHS-US labeling         Hazard pictograms (GHS-US)       :         GH505         Signal word (GHS-US)       :         Hazard statements (GHS-US)       :         Hazard statements (GHS-US)       :         Hazard statements (GHS-US)       :         Precautionary statements (GHS-US)       :         Precautionary statements (GHS-US)       :         P264 - Wash exposed skin thoroughly after handling         P273 - Avoid release to the environment         P280 - Wear protective gloves, eye protection         P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting         P303 + P351 + P338 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower         P305 + P351 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing before reuse         P405 - Store locked up         P301 - Immediately call a poison center or doctor/physician         P363 - V951 - Dispose of contents/container to comply with local, state and federal regulations If inhaled: Remove person to fresh air and keep comfortable for breathing         2.3. Other hazards       : None under normal conditions.	Hazardous to the aquatic environment - A	Acute Hazard Category 2 H401
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classification	2.3. Other hazards	
	Other hazards not contributing to the classification	: None under normal conditions.
		S US)

Not applicable

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# SECTION 3: Composition/Information on ingredients

# 3.1. Substance

# Not applicable 3.2. Mixture

Name	Product identifier	%	GHS-US classification
Water	(CAS No) 7732-18-5	94.95	Not classified
Ammonium Hydroxide, ACS	(CAS No) 1336-21-6	5.05	Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Inhalation:vapour), H332 Skin Corr. 1C, H314 Eye Dam. 1, H318 Aquatic Acute 1, H400

Full text of hazard classes and H-statements : see section 16

SECTION 4: First aid measures	
4.1. Description of first aid measures	
First-aid measures general	: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).
First-aid measures after inhalation	: Allow victim to breathe fresh air. Allow the victim to rest.
First-aid measures after skin contact	: Wash with plenty of soap and water. Wash contaminated clothing before reuse. If skin irritation occurs: Get medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
First-aid measures after ingestion	: Rinse mouth. Do NOT induce vomiting. Obtain emergency medical attention.
4.2. Most important symptoms and ef	fects, both acute and delayed
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.
4.3. Indication of any immediate medi	ical attention and special treatment needed
Obtain medical assistance.	
SECTION 5: Firefighting measures	
5.1. Extinguishing media	
Suitable extinguishing media	: Foam. Dry powder. Carbon dioxide. Water spray. Sand.
Unsuitable extinguishing media	: Do not use a heavy water stream.
5 5	
5.2. Special hazards arising from the	substance or mixture
No additional information available	
5.3. Advice for firefighters	
Firefighting instructions	: Use water spray or fog for cooling exposed containers. Exercise caution when fighting any chemical fire. Prevent fire-fighting water from entering environment.
Protection during firefighting	: Do not enter fire area without proper protective equipment, including respiratory protection.
SECTION 6: Accidental release me	asures
	equipment and emergency procedures
6.1.1. For non-emergency personnel	
Protective equipment	: Safety glasses. Gloves.
Emergency procedures	: Evacuate unnecessary personnel.
0 71	
6.1.2. For emergency responders	
Protective equipment	: Equip cleanup crew with proper protection.
Emergency procedures	: Ventilate area.
6.2. Environmental precautions	
Prevent entry to sewers and public waters. No	otify authorities if liquid enters sewers or public waters. Avoid release to the environment.
6.3. Methods and material for contain	ment and cleaning up
Methods for cleaning up	: Soak up spills with inert solids, such as clay or diatomaceous earth as soon as possible. Collect

spillage. Store away from other materials.

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### 6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage	
7.1. Precautions for safe handling	
Precautions for safe handling	: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Provide good ventilation in process area to prevent formation of vapor.
Hygiene measures	: Wash exposed skin thoroughly after handling.
7.2. Conditions for safe storage, including	ng any incompatibilities
Storage conditions	: Keep cool. Keep container closed when not in use.
Incompatible products	: Strong acids.
Incompatible materials	: Sources of ignition. Direct sunlight.

### **SECTION 8: Exposure controls/personal protection**

### 8.1. Control parameters

Ammonium Hydroxide, ACS (1336-21-6)			
ACGIH	ACGIH TWA (mg/m <sup>3</sup> )	17 mg/m <sup>3</sup>	
ACGIH	ACGIH STEL (mg/m <sup>3</sup> )	24 mg/m <sup>3</sup>	
OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	35 mg/m <sup>3</sup>	
OSHA	OSHA PEL (TWA) (ppm)	50 ppm	
IDLH	US IDLH (ppm)	300 ppm	
NIOSH	NIOSH REL (TWA) (mg/m <sup>3</sup> )	18 mg/m <sup>3</sup>	
NIOSH	NIOSH REL (TWA) (ppm)	25 ppm	
NIOSH	NIOSH REL (STEL) (mg/m <sup>3</sup> )	27 mg/m <sup>3</sup>	
NIOSH	NIOSH REL (STEL) (ppm)	35 ppm	
Water (7732-18-5)			
Not applicable			

#### 8.2. Exposure controls

Appropriate engineering controls

Personal protective equipment

: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation.

Avoid all unnecessary exposure. Gloves. Safety glasses. Corrosionproof clothing. Face shield.

 High gas/vapor concentration: gas mask with filter type A.

 Image: High gas/vapor concentration: gas mask with filter type A.

 Image: Hand protection

 Eye protection

 Eye protection

 Skin and body protection

 Respiratory protection

 Gther information

 Umage: High gas/vapor concentration: gas mask with filter type A.

 Image: Hand protection

 Eye protection

 Skin and body protection

 Gther information

 Umage: Hand protection

 Image: Hand protection

### SECTION 9: Physical and chemical properties

9.1.	Information on basic physical a	and chemical properties
Physic	al state	: Liquid
Color		: Colorless
Odor		: Ammonia odour
Odor tl	nreshold	: No data available
pН		: No data available

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	Melting point	:	No data available
	Freezing point	:	No data available
	Boiling point	:	No data available
	Flash point	:	No data available
	Relative evaporation rate (butyl acetate=1)	:	No data available
	Flammability (solid, gas)	:	Non flammable.
	Vapor pressure	:	No data available
	Relative vapor density at 20 °C	:	No data available
	Relative density	:	No data available
	Specific gravity / density	:	0.98 g/ml
	Solubility	:	No data available
	Log Pow	:	No data available
	Auto-ignition temperature	:	No data available
	Decomposition temperature	:	No data available
	Viscosity, kinematic	:	1.1 cSt
	Viscosity, dynamic	:	No data available
	Explosion limits	:	No data available
	Explosive properties	:	No data available
	Oxidizing properties	:	No data available

### 9.2. Other information

No additional information available

SECTION 10: Stability and reacti	vity	
0.1. Reactivity		
No additional information available		
10.2. Chemical stability		
Stable under normal conditions.		
10.3. Possibility of hazardous reaction	ons	
Not established.		
10.4. Conditions to avoid		
Direct sunlight. Extremely high or low temp	eratures.	
10.5. Incompatible materials		
Strong acids.		
10.6. Hazardous decomposition proc	ducts	
Gaseous ammonia.		
SECTION 11: Toxicological infor	mation	
11.1. Information on toxicological ef	iects	
Likely routes of exposure	: Inhalation; Skin and eye contact	
Acute toxicity	: Not classified	
Ammonium Hydroxide, ACS (1336-21-6)		
LD50 oral rat	350 mg/kg	
ATE US (oral)	350.000 mg/kg body weight	
ATE US (vapors)	10.714 mg/l/4h	
Water (7732-18-5)		
LD50 oral rat	≥ 90000 mg/kg	

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Germ cell mutagenicity Carcinogenicity	: Not classified : Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: Not classified
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes serious eye irritation.

SECTION 12: Ecological information		
12.1. Toxicity		
Ecology - water	: Harmful to aquatic life.	
Ammonium Hydroxide, ACS	(1336-21-6)	
Ammonium Hydroxide, ACS LC50 fish 1	(1336-21-6) 0.16 - 1.1 mg/l (LC50; 96 h)	

12.2. Persistence and degradability		
Ammonium Hydroxide, 20% v/v (1+4)		
Persistence and degradability Not established.		
Ammonium Hydroxide, ACS (1336-21-6)		
Persistence and degradability	Readily biodegradable in water. Ozonation in water. Biodegradable in the soil. No test data on mobility of the components available. Ozonation in the air.	
Water (7732-18-5)		
Persistence and degradability	Not established.	
12.3. Bioaccumulative potential		
Ammonium Hydroxide, 20% v/v (1+4)		
Bioaccumulative potential	Not established.	
Ammonium Hydroxide, ACS (1336-21-6)		
Log Pow	-1.3	
Bioaccumulative potential	Bioaccumulation: not applicable.	
Water (7732-18-5)		
Bioaccumulative potential	Not established.	

### 12.4. Mobility in soil

No additional information available

12.5. Other adverse effects	
Effect on the global warming	: No known effects from this product.
GWPmix comment	: No known effects from this product.
Other information	: Avoid release to the environment.
SECTION 13: Disposal considerations	

13.1.	Waste treatment methods	
Waste disposal recommendations		: Dispose in a safe manner in accordance with local/national regulations. Dispose of contents/container to comply with local, state and federal regulations.
Ecology	- waste materials	: Avoid release to the environment.

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#### SECTION 14: Transport information

#### Department of Transportation (DOT)

In accordance with DOT

Not regulated

## SECTION 15: Regulatory information

#### 15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

Chemical(s) subject to the reporting requirements of Section 313 or Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986 and 40 CFR Part 372.

Ammonium Hydroxide, ACS		CAS No 1336-21-6	5.05%
Ammonium Hydroxide, ACS (1336-21-6)			
RQ (Reportable quantity, section 304 of EPA's List of Lists)	1000 lb		

#### 15.2. International regulations

CANADA				
Ammonium Hydroxide, 20% v/v (1+4)				
WHMIS Classification	Class D Division 2 Subdivision B - Toxic material causing other toxic effects			
Ammonium Hydroxide, ACS (1336-21-6)				
WHMIS Classification	Class E - Corrosive Material			
Water (7732-18-5)				
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria			

#### **EU-Regulations**

No additional information available

#### **National regulations**

No additional information available

### 15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer, developmental and/or reproductive harm

SECTION 16: Other information				
Revision date		: 11/16/2016		
Other information		: None.		
Full text of H-phrases: see section 16:				
	H302	Harmful if swallowed		
	H314	Causes severe skin burns and eye damage		
	H318	Causes serious eye damage		
	H332	Harmful if inhaled		
	H400	Very toxic to aquatic life		
	H401	Toxic to aquatic life		
NFPA health hazard		: 1 - Exposure could cause irritation but only minor residual injury even if no treatment is given.		
NFPA fire hazard		: 0 - Materials that will not burn.		
NFPA reactivity		: 0 - Normally stable, even under fire exposure conditions, and are not reactive with water.		

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HMIS III Rating	
Health	: 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	: 0 Minimal Hazard - Materials that will not burn
Physical	: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.
Personal protection	: B B - Safety glasses, Gloves

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