Safety Data Sheet
acc. to OSHA HCS (HazCom 2012)

Printing date 09/23/2019 Reviewed on 09/23/2019

* 1 Identification

· **Product identifier**

· **Trade name: KS358 - Ammonia Buffer Solution**

· **Catalogue number:**
56Z035898, 56L0358, 56L035865, 56L035895, 56L035897, 56L035898, 56U035865, 56U035895, 56U035897, 56U035898

· **Application of the substance / the mixture:** Reagent for water analysis

· **Manufacturer/Supplier:**
Tintometer Inc.
6456 Parkland Drive
Sarasota, FL 34243
USA
phone: (941) 756-6410
fax: (941) 727-9654
www.lovibond.us
Made in Germany

· **Emergency telephone number:** + 1 866 928 0789 (English, French, Spanish)

* 2 Hazard(s) identification

· **Classification of the substance or mixture**

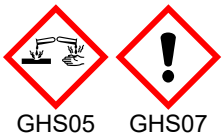

GHS05 Corrosion

Met. Corr.1	H290	May be corrosive to metals.
Skin Corr. 1B	H314	Causes severe skin burns and eye damage.
Eye Dam. 1	H318	Causes serious eye damage.


GHS07

STOT SE 3	H335	May cause respiratory irritation.

· **Label elements**
· **GHS label elements** The product is classified and labeled according to the Hazard Communication Standard (HCS).
· **Hazard pictograms**


GHS05 GHS07

· **Signal word** Danger
· **Hazard-determining components of labeling:**
ammonia 18 %
· **Hazard statements**
H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.
H335 May cause respiratory irritation.
· **Precautionary statements**

P260	Do not breathe mist/vapours/spray.
P280	Wear protective gloves/protective clothing/eye protection.
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.
P308+P310	IF exposed or concerned: Immediately call a poison center/doctor.

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P390 Absorb spillage to prevent material damage.

· **Other hazards** No further relevant information available.

*
3 Composition/information on ingredients

· **Chemical characterization: Mixtures**
· **Description:** aqueous solution
· **Composition and Information on Ingredients:**
Percent ranges are used due to the confidential product information.

CAS: 1336-21-6 EINECS: 215-647-6 Index number: 007-001-01-2 RTECS: BQ9625000	ammonia Met. Corr.1, H290; Skin Corr. 1B, H314; Aquatic Acute 1, H400; STOT SE 3, H335	10–20%
CAS: 12125-02-9 EINECS: 235-186-4 Index number: 017-014-00-8 RTECS: BP 4550000	ammonium chloride Acute Tox. 4, H302; Eye Irrit. 2A, H319	10–20%

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

4 First-aid measures

· **Description of first aid measures**
· **General information:** Immediately remove any clothing soiled by the product.
· **After inhalation:** Supply fresh air.
· **After skin contact:**
Immediately wash with polyethylene glycol 400.
Immediately rinse with plenty of water.
Immediate medical treatment necessary. Failure to treat burns can prevent wounds from healing.
· **After eye contact:**
Rinse opened eye for several minutes (at least 15 min) under running water.
Call a doctor immediately.
· **After swallowing:**
Rinse out mouth and then drink 1-2 glasses of water.
Do not induce vomiting; immediately call for medical help.
· **Most important symptoms and effects, both acute and delayed**
burns
after inhalation:
mucosal irritations, cough, breathing difficulty
headache
respiratory paralysis
after swallowing:
strong caustic effect
abdominal pain
sickness
vomiting
narcotic conditions
CNS disorders
· **Danger:**
Danger of circulatory collapse.
Danger of pulmonary edema.
· **Indication of any immediate medical attention and special treatment needed:**
If swallowed or in case of vomiting, danger of entering the lungs.
Later observation for pneumonia and pulmonary edema.
Monitor circulation.

5 Fire-fighting measures

· **Extinguishing media**
· **Suitable extinguishing agents:** Use fire fighting measures that suit the environment.

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· **Special hazards arising from the substance or mixture**
The product is not combustible.
Can form explosive gas-air mixtures.
Formation of toxic gases is possible during heating or in case of fire.
Ammonia (NH_3)
Hydrogen chloride (HCl)
Nitrogen oxides (NOx)
· **Advice for firefighters**
· **Protective equipment:**
Wear self-contained respiratory protective device.
Wear fully protective suit.
· **Additional information**
Collect contaminated fire fighting water separately. It must not enter the sewage system.
Cool endangered receptacles with water spray.
Dispose of fire debris and contaminated fire fighting water in accordance with official regulations.
Ambient fire may liberate hazardous vapours.

6 Accidental release measures

· **Personal precautions, protective equipment and emergency procedures**
· **Advice for non-emergency personnel:**
Wear protective equipment. Keep unprotected persons away.
Avoid substance contact.
Ensure adequate ventilation
Use respiratory protective device against the effects of fumes/dust/aerosol.
· **Advice for emergency responders:** Protective equipment: see section 8
· **Environmental precautions:** Do not allow product to reach sewage system or any water course.
· **Methods and material for containment and cleaning up:**
Ensure adequate ventilation.
Absorb with liquid-binding material (sand, diatomite, universal binders).
Dispose contaminated material as waste according to item 13.
· **Reference to other sections**
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

7 Handling and storage

· **Precautions for safe handling**
· **Advice on safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
· **Hygiene measures:**
Do not inhale gases / fumes / aerosols.
Do not get in eyes, on skin, or on clothing.
Take off immediately all contaminated clothing.
Wash hands before breaks and at the end of work.
Do not eat, drink or smoke when using this product.

· **Conditions for safe storage, including any incompatibilities**
· **Storage:**
· **Requirements to be met by storerooms and receptacles:**
Store in a cool location.
Unsuitable material for receptacle: aluminium
Unsuitable material for container: metals, metal alloys
· **Information about storage in one common storage facility:**
Store away from metals.
Do not store together with acids.
Do not store together with alkalis (caustic solutions).
Store away from oxidizing agents.
· **Further information about storage conditions:**
Protect from heat and direct sunlight.
Protect from exposure to the light.
Protect from humidity and water.
· **Recommended storage temperature:** 20°C +/- 5°C (approx. 68°F)

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

8 Exposure controls/personal protection

· **Control parameters**
· **Components with limit values that require monitoring at the workplace:**
The following constituent is the only constituent of the product which has a PEL, TLV or other recommended exposure limit.

CAS: 12125-02-9 ammonium chloride	
REL (USA)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³
TLV (USA)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³
EL (Canada)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³ fume
EV (Canada)	Short-term value: 20 mg/m³ Long-term value: 10 mg/m³ fume

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

· **Engineering measures:**
Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.
See item 7.

· **Personal protective equipment:**
· **Breathing equipment:** Use respiratory protective device against the effects of fumes/dust/aerosol.
· **Recommended filter device for short term use:** Filter K
· **Protection of hands:**
Protective gloves
Preventive skin protection by use of skin-protecting agents is recommended.
After use of gloves apply skin-cleaning agents and skin cosmetics.
· **Material of gloves**
Fluorocarbon rubber (Viton)
Recommended thickness of the material: ≥ 0.4 mm
· **Penetration time of glove material**
Value for the permeation: Level ≤ 1 (10 min)
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
· **Eye protection:** Tightly sealed goggles
· **Body protection:** Protective work clothing

· **Limitation and supervision of exposure into the environment:**
Do not allow product to reach sewage system or any water course.

9 Physical and chemical properties

· **Information on basic physical and chemical properties**	
· **Appearance:**	
Form / Physical state:	Solution
Color:	Colorless
· **Odor:**	Pungent
· **Odor threshold:**	CAS 1336-21-6: 0.02 - 71 ppm NH_3
· **pH-value at 20°C (6820°F):**	10.5
· **Melting point/freezing point:**	Not determined.
· **Initial boiling point and boiling range:**	37°C (98.6 37°F) (CAS 1336-21-6)
· **Flash point:**	Not applicable.
· **Flammability (solid, gas):**	Not applicable.
· **Decomposition temperature:**	Not determined.

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· **Auto-ignition temperature:**	Product is not self-igniting.
· **Danger of explosion:**	Product is not explosive. However, formation of explosive air/vapor mixtures are possible.
· **Flammability or explosive limits:**	
Lower:	15.4 Vol % (CAS 1336-21-6)
Upper:	33.6 Vol % (CAS 1336-21-6)
· **Oxidizing properties:**	none
· **Vapor Pressure at 20°C (6820°F):**	483 hPa (362.3 483 mm Hg) (CAS 1336-21-6)
· **Density at 20°C (6820°F):**	0.98 g/cm³ (8.18 0,98 lbs/gal)
· **Relative density:**	Not determined.
· **Vapor density:**	Not determined.
· **Evaporation rate:**	Not determined.
· **Solubility(ies)**	
Water:	Fully miscible.
· **Partition coefficient (n-octanol/water):**	Not determined.
· **Viscosity:**	Not determined.
· **Solvent content:**	
Organic solvents:	0.0 %
Water:	> 65 %
Solids content:	< 20 %
· **Other information**	No further relevant information available.

10 Stability and reactivity

· **Reactivity** Fumes can combine with air to form an explosive mixture.
· **Chemical stability** Stable at ambient temperature (room temperature).
· **Possibility of hazardous reactions**
Corrosive action on metals.
Reacts with various metals.
Reacts with acids, alkalis and oxidizing agents.
Reacts with halogenated compounds.
Violent reactions possible with:
chlorine
· **Conditions to avoid** No further relevant information available.
· **Incompatible materials:**
aluminum
copper
zinc
Iron
· **Hazardous decomposition products:**
Hydrogen chloride (HCl)
Ammonia (NH_3)
In case of fire: see section 5.

11 Toxicological information

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

· **LD/LC50 values that are relevant for classification:**		
CAS: 1336-21-6 ammonia		
Oral	LDo	43 mg/kg (human) (29% solution, RTECS)
CAS: 12125-02-9 ammonium chloride		
Oral	LD50	1410 mg/kg (rat) (OECD 1410) (Merck)

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· **Primary irritant effect:**
· **on the skin:** Causes severe skin burns.
· **on the eye:**
Causes serious eye damage.
Risk of blindness!

· **Information on components:**		
CAS: 12125-02-9 ammonium chloride		
Irritation of eyes	OECD 405	(rabbit: irritation)

· **Sensitization:** Based on available data, the classification criteria are not met.

· **Information on components:**		
CAS: 12125-02-9 ammonium chloride		
Sensitization	OECD 406	(guinea pig: negative) (EPA OPP 81-6: Guinea pig maximisation test)

· **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.

· **Other information:** see section 8 / 15

· **Synergistic Products:** None

· **CMR effects (carcinogenity, mutagenicity and toxicity for reproduction):** The following statements refer to the mixture:
· **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** Based on available data, the classification criteria are not met.

· **STOT (specific target organ toxicity) -single exposure** May cause respiratory irritation.
· **STOT (specific target organ toxicity) -repeated exposure** Based on available data, the classification criteria are not met.
· **Aspiration hazard** Based on available data, the classification criteria are not met.

· **Information on components:**
OECD 414: Teratogenicity testing
OECD 473: Mutagenicity testing
OECD 471, 474, 476, 487: Germ cell mutagenicity testing

CAS: 12125-02-9 ammonium chloride	
OECD 471	(negative) (Escherichia coli / Salmonella typhimurium)

· **Additional toxicological information:**
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.
Other dangerous properties can not be excluded.
· **Experience with humans:** CAS 1336-21-6: May cause lung damages.

12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**	
CAS: 1336-21-6 ammonia	
EC50	24 mg/l/48h (Daphnia magna)
	1.16 mg/l/48h (Daphnia pulex)
LC50	0.53 mg/l/96h (rainbow trout)
CAS: 12125-02-9 ammonium chloride	
EC50	>100 mg/l/48h (Daphnia magna)
LC50	42.91 mg/l/96h (rainbow trout) (Merck)

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· **Other information:**
Toxic for fish:
NH_4^+ > 0.3 mg/l
· **Persistence and degradability** .
· **Bioaccumulative potential**
Pow = n-octanol/wasser partition coefficient
log Pow < 1 = Does not accumulate in organisms.

CAS: 1336-21-6 ammonia	
log Pow	-1.38 (.) (experimental)
CAS: 12125-02-9 ammonium chloride	
log Pow	-4.37 (.)

· **Mobility in soil** No further relevant information available.
· **Other adverse effects**
Depending on the concentration, phosphorus and/or nitrogen compounds may contribute to the eutrophication of water supplies.
Forms corrosive mixtures with water even if diluted.
Avoid transfer into the environment.

13 Disposal considerations

· **Waste treatment methods**
· **Recommendation:**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Hand over to hazardous waste disposers.

· **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, IMDG, IATA**	UN2672
· **UN proper shipping name**	
· **DOT**	Ammonia solution mixture
· **IMDG, IATA**	AMMONIA SOLUTION mixture
· **Transport hazard class(es)**	
· **DOT**	
· **Class**	8 Corrosive substances
· **Label**	8
· **IMDG, IATA**	
· **Class**	8 Corrosive substances
· **Label**	8
· **Packing group**	
· **DOT, IMDG, IATA**	III
· **Environmental hazards:**	Not applicable.
· **Special precautions for user**	Warning: Corrosive substances
· **Danger code (Kemler):**	80
· **EMS Number:**	F-A,S-B

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· **Segregation groups**	Alkalis
· **Stowage Category**	A
· **Stowage Code**	SW2 Clear of living quarters. SW5 If under deck, stow in a mechanically ventilated space.
· **Segregation Code**	SG35 Stow "separated from" SGG1-acids
· **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
· **IMDG**	
· **Limited quantities (LQ)**	5L
· **Excepted quantities (EQ)**	Code: E1 Maximum net quantity per inner packaging: 30 ml Maximum net quantity per outer packaging: 1000 ml

15 Regulatory information

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

· **Section 355 (Extremely hazardous substances):**
None of the ingredients is listed.

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

CAS: 1336-21-6	ammonia

· **TSCA (Toxic Substances Control Act):**
All components have the value ACTIVE.

· **Hazardous Air Pollutants**
None of the ingredients is listed.

· **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:**
None of the ingredients is listed.

· **New Jersey Right-to-Know List:**

CAS: 1336-21-6	ammonia
CAS: 12125-02-9	ammonium chloride

· **New Jersey Special Hazardous Substance List:**

CAS: 1336-21-6	ammonia	CO

· **Pennsylvania Right-to-Know List:**

CAS: 1336-21-6	ammonia
CAS: 12125-02-9	ammonium chloride

· **Pennsylvania Special Hazardous Substance List:**

CAS: 1336-21-6	ammonia	E
CAS: 12125-02-9	ammonium chloride	E

· **EPA (Environmental Protection Agency)**
None of the ingredients is listed.

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

None of the ingredients is listed.

· **Information about limitation of use:** Employment restrictions concerning young persons must be observed.

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

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**
H290 May be corrosive to metals.
H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H319 Causes serious eye irritation.
H335 May cause respiratory irritation.
H400 Very toxic to aquatic life.

· **Date of preparation / last revision** 09/23/2019 / -

· **Abbreviations and acronyms:**
OECD: Organisation for Economic Co-operation and Development
STOT: specific target organ toxicity
SE: single exposure
RE: repeated exposure
EC50: half maximal effective concentration
IC50: hallf maximal inhibitory concentration
NOEL or NOEC: No Observed Effect Level or Concentration
ACGIH® - American Conference of Governmental Industrial Hygienists
•A1 - Confirmed human carcinogen
•A2 - Suspected human carcinogen
•A3 - Confirmed animal carcinogen with unknown relevance to humans
•A4 - Not classifiable as a human carcinogen
•A5 - Not suspected as a human carcinogen
IARC - International Agency for Research on Cancer
•Group 1 - Carcinogenic to humans
•Group 2A - Probably carcinogenic to humans
•Group 2B - Possibly carcinogenic to humans
•Group 3 - Not classifiable as to carcinogenicity to humans
•Group 4 - Probably not carcinogenic to humans
NTP - National Toxicology Program, U.S. Department of Health and Human Services
•Group K - Known to be Human Carcinogens
•Group R - Reasonably Anticipated to be Human Carcinogens
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
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
NIOSH: National Institute for Occupational Safety
OSHA: Occupational Safety & Health
TLV: Threshold Limit Value
PEL: Permissible Exposure Limit
REL: Recommended Exposure Limit
Met. Corr.1: Corrosive to metals – Category 1
Acute Tox. 4: Acute toxicity – Category 4
Skin Corr. 1B: Skin corrosion/irritation – Category 1B
Eye Dam. 1: Serious eye damage/eye irritation – Category 1
Eye Irrit. 2A: Serious eye damage/eye irritation – Category 2A
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3
Aquatic Acute 1: Hazardous to the aquatic environment - acute aquatic hazard – Category 1

· **Sources**
Data arise from safety data sheets, reference works and literature.
RTECS (Registry of Toxic Effects of Chemical Substances)

· *** Data compared to the previous version altered.**