Material
Safety Data Sheet

1: Identification

Product name: **J – PROCESS REPLENISHER.**

Manufacturer name: **Timna Copper Mines Ltd.**
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2: Composition/Information on Ingredients

Aqueous ammoniacal solution
Synonyms
Ammonium hydroxide solution

Hazardous ingredients:
Name according to EC Directives: ammonia solution
Hazard symbols: C N R- phrases: 34 – 50
EC-Index- No: 007-001-01-2 causes burns. Very toxic to aquatic organisms.
CAS-NO. 1336-21-6 content: 10%

3: Hazards Identification

Causes burns. Very toxic to aquatic organisms

4: First Aid Measures

After inhalation: fresh air Summon doctor
After skin contact: wash off with plenty of water
Immediately remove contaminated clothing
After eye contact: rinse out with plenty of water for at least 10 minutes with the eyelid held wide open immediately summon eye specialist.
After swallowing : make victim drink plenty of water (if necessary several liters)
Avoid vomiting (risk of perforation). Immediately summon doctor. Do not attempt to neutralize.

5: Fire-Fighting Measures

Suitable extinguishing media:

Powder, foam, spray, water fire extinguisher: powder, carbon dioxide

Special risks:

Non-combustible. Development of hazardous combustion gases or vapours possible in the event of fire.

Special protective equipment for fire fighting:

Do not stay in dangerous zone without suitable chemical protection clothing and self-contained breathing apparatus.

Other information:

Contain escaping vapours with water. Cool containers with water. Prevent fire-fighting water from entering surface water or groundwater.

6: Accidental Release Measures

Person-related precautionary measures:

Do not inhale vapours aerosols. Avoid substance contact.

Procedures for cleaning/absorption:

Take up with liquid-absorbent .

Forward for disposal clean up affected area

Environmental-protection measures:

Do not allow to enter sewerage system

Additional notes:

Render harmless: neutralize with dilute sulfuric acid

7: Handling and Storage

Handling

No further requirements.

Storage

Tightly closed. In a well-ventilated place

8: Exposure Control and Personal Protection

Specific control parameter

MAK Germany (max. workplace conc.) Ammonia

20ml/m³ or 14mg/m³

Personal protective equipment:

Respiratory protection: required when vapours / aerosols are generated .Filter k (acc,to DIN 3181) for NH_3

Eye protection: required

Hand protection: required

Protective clothing should be selected specifically for the working place depending on concentration and quantity of the hazardous substance handled.

The resistance of the protective clothing to chemicals should be ascertained with the respective supplier.

Other protective equipment: Suitable protective clothing

Industrial hygiene:

Immediately change contaminated clothing. Apply skin. Protective barrier cream. Wash hands and face after working with substance.

9: Physical and Chemical Properties

Form:	liquid
Color:	colorless
Odor:	pungent

Ph value	(20C°)	alkaline
Ignition temperature		not available
Flash point		not available
Explosion limits	lower	not available
	Upper	not available

Solubility in water	(20)	soluble

10: Stability and Reactivity

Conditions to be avoided

Heating.

Substances to be avoided

Alkalis (formation of ammonia), iodine, strong acids, halogens, mercury oxide, silver.

Hazardous decomposition products

In the event of fire: ammonia

Further information

Incompatible with various metals and metal alloys (i.e. zinc, copper)

Explosible with air in a vaporous/gaseous state when heated.

11: Toxicological Information

Acute toxicity

LD_{50} (oral, rat):330 mg/kg (anhydrous substance)

LCLo (inhalation, human): 5000ppm(v) (anhydrous substance)

LC_{50}(inhalation, rat):2000ppm(v)/4h(ammonia)

The literature data available to us do not conform with the labeling prescribed by the EC. The Ec has dossiers of the manufacturers which have not been published.

Subacute to chronic toxicity

An embryotoxic effect need not be feared when the threshold limit value is observed.

Further toxicological information

After inhalation: possible symptoms : coughing , pulmonary oedema.

When vapours aerosols are generated: strong irritant effect.

After skin contact: possible effect after contact with substance : irritant and caustic effects (dermatitis, necrosis).

After swallowing: mucosal irritations, gastric pain , nausea , bloody vomiting, collapse, shock , dyspnoea , unconsciousness. Risk of perforation in the oesophagus and stomach.

Further data

The product should be handled with the care usual when dealing with chemicals.

12: Ecological Information

Behavior in environmental compartments:

Evaluation number (FRG) (fish); 5.8; Evaluation number (FRG) (bacteria): 5.3;

Evaluation number (FRG) (mammal): 3.0

Ecotoxic effects:

Biological effects: Highly toxic for aquatic organisms. Harmful effect due cause

Long-term adverse effects in the aquatic environment.

Fish toxicity: P. promelas LC_{30}: 0.74- 3.40 mg/96h; onchorhynchus mykiss

LC_{50}: 0.16- 1.10mg/96 h :

Daphnia toxicity: Daphnia magna LC_{50}: 60mg/24h

Aquatic organisms LC_{50}: 10- 100mg/ 96H:

Further ecologic data:
Do not allow to enter waters, waste water, or soil

13: Disposal Considerations

Product:
There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical Residues generally count as special waste .The disposal of the latter is regulated in the EC member countries through corresponding laws and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste.

Packaging:

Disposal in compliance with official regulations. Handle contaminated packaging in the same way as the substance itself .if not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.

14: Transport Information

Transport over land ADR/RID and GGVS/GGVE (Germany)

GGVS/GGVE class: 8 Number and letter 43 Cº

ADR/RID class : 8 Number and letter 43 Cº

Name of material: 2672 DILUTED AMMONIA SOLUTION

River transport AND/ADNR

Not examined

Sea transport IMDG

IMDG class: 8 UN- No 2672 packaging group: III

Ems: 8-06 MFAG: 723

Correct technical name: DILUTED AMMONIA SOLUTION

Air transport ICAO-TI and IATA-DGR

ICAO/IATA class: 8 UN/ID-No 2672 packaging group: III

The transport regulations are cited according to international regulations and in the form applicable in Germany (GGVS/GGVE). Possible national deviations in other countries are not considered.

15: Regulatory Information

Labeling according to EC Directives

Symbol:	C	Corrosive
	N	Dangerous for the environment
R-phrases:	34-50	Causes burns . very toxic to aquatic organisms.
S-phrases:	26-36/ 37/ 39-45-61	In case of contact with eyes. Rinse immediately with plenty of water and seek medical advice. Wear suitable protective clothing , gloves and eye/ face protection. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible), Avoid release to the environment . Refer to special instructions/ Safety data sheets.
EC-NO:	213-647-6	EC label

German regulations

Water pollution class 2 (polluting substance)

16: Other Information

Reason for ateration

Change in labeling

General update.

The information contained here in is based on the present state of our knowledge It is believed to be correct but is not necessarily all inclusive and shall be used only as a guide .Timna Copper Mines shall not be held liable for any damage resulting from handling or from contact with the above product. For further information contact Timna Copper Mines Ltd.