

## 1. Identification

<b>Product identifier</b>	<b>Ammonia</b>		
<b>Other means of identification</b>	None.		
<b>Recommended use</b>	Industrial applications		
<b>Recommended restrictions</b>	None known.		
<b>Manufacturer/Importer/Supplier/Distributor information</b>			
<b>Supplier</b>			
<b>Company name</b>	PVS Benson		
<b>Address</b>	1012 Gore Road Freelton, ON L0R1K0 Canada		
<b>Telephone</b>	1-800-265-0014		
<b>e-mail</b>	pvsbensoninfo@pvschemicals.com		
<b>Emergency phone number</b>	24 hours/7 days:	1-519-821-0215	
<b>Supplier</b>	See above.		

## 2. Hazard identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Acute toxicity, oral	Category 4
	Acute toxicity, inhalation	Category 3
	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
<b>Environmental hazards</b>	Not classified.	

**Label elements**



<b>Signal word</b>	Danger
<b>Hazard statement</b>	Causes severe skin burns and eye damage. Harmful if swallowed. Toxic if inhaled.
<b>Precautionary statement</b>	

**Prevention** Do not breathe mist or vapour. Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area.

**Response** IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Wash contaminated clothing before reuse. IF INHALED: remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTRE/doctor. Specific treatment (see information on this label). IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**Storage** Store locked up. Store in a well-ventilated place. Keep container tightly closed.

**Disposal** Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards** None known.

**Supplemental information** 68.5 % of the mixture consists of component(s) of unknown acute inhalation toxicity.

## 3. Composition/information on ingredients

**Mixtures**

Chemical name	Common name and synonyms	CAS number	%
Ammonia		7664-41-7	20-31.5

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

**Composition comments** The concentration ranges are provided due to batch-to-batch variability.

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#### 4. First-aid measures

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<b>Inhalation</b>	IF INHALED: remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTRE/doctor. Specific treatment (see information on this label).
<b>Skin contact</b>	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water. Immediately call a POISON CENTRE/doctor. Specific treatment (see information on this label). Wash contaminated clothing before reuse.
<b>Eye contact</b>	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTRE/doctor.
<b>Ingestion</b>	IF SWALLOWED: rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTRE/doctor.
<b>Most important symptoms/effects, acute and delayed</b>	Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Symptoms may be delayed.
<b>General information</b>	If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance. Avoid breathing mists or vapours. Avoid contact with eyes and skin. Wear rubber gloves and chemical splash goggles. Keep out of reach of children.

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#### 5. Fire-fighting measures

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<b>Suitable extinguishing media</b>	Treat for surrounding material.
<b>Unsuitable extinguishing media</b>	Do not use water jet as an extinguisher, as this will spread the fire.
<b>Specific hazards arising from the chemical</b>	Firefighters should wear a self-contained breathing apparatus. Cool containers with flooding quantities of water until well after fire is out.
<b>Hazardous combustion products</b>	May include and are not limited to: Ammonia. Oxides of nitrogen. Hydrogen gas.
<b>Special protective equipment and precautions for firefighters</b>	Firefighters should wear full protective clothing including self contained breathing apparatus.
<b>Fire fighting equipment/instructions</b>	Move containers from fire area if you can do so without risk.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

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#### 6. Accidental release measures

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<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapour. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Prevent entry into waterways, sewer, basements or confined areas.  Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Cover with plastic sheet to prevent spreading. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.  Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
<b>Environmental precautions</b>	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground. This material is a water pollutant and should be prevented from contaminating soil or from entering sewage and drainage systems and bodies of water. Do not discharge into lakes, streams, ponds or public waters.

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#### 7. Handling and storage

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<b>Precautions for safe handling</b>	DANGER -- CORROSIVE Do not get in eyes, on skin, or on clothing. Avoid breathing vapours or mists of this product. Do not taste or swallow. When using, do not eat, drink or smoke. Use only outdoors or in a well-ventilated area. Avoid prolonged exposure. Wear appropriate personal protective equipment. Wash thoroughly after handling. Use good industrial hygiene practices in handling this material. Keep container tightly closed.
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**Conditions for safe storage, including any incompatibilities**

Store locked up. Protect from sunlight. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in a cool, dry, well-ventilated place away from incompatible materials. Store below 25°C. Keep out of reach of children.

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## 8. Exposure controls/Personal protection

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**Occupational exposure limits****US. ACGIH Threshold Limit Values**

Components	Type	Value
Ammonia (CAS 7664-41-7)	STEL	35 ppm
	TWA	25 ppm

**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

Components	Type	Value
Ammonia (CAS 7664-41-7)	STEL	24 mg/m <sup>3</sup>
		35 ppm
	TWA	17 mg/m <sup>3</sup>
		25 ppm

**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

Components	Type	Value
Ammonia (CAS 7664-41-7)	STEL	35 ppm
	TWA	25 ppm

**Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)**

Components	Type	Value
Ammonia (CAS 7664-41-7)	STEL	35 ppm
	TWA	25 ppm

**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

Components	Type	Value
Ammonia (CAS 7664-41-7)	STEL	35 ppm
	TWA	25 ppm

**Canada. Quebec OELs. (Ministry of Labour - Regulation Respecting the Quality of the Work Environment)**

Components	Type	Value
Ammonia (CAS 7664-41-7)	STEL	24 mg/m <sup>3</sup>
		35 ppm
	TWA	17 mg/m <sup>3</sup>
		25 ppm

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Exposure guidelines**

See above

**Appropriate engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Individual protection measures, such as personal protective equipment****Eye/face protection**

Wear safety glasses with side shields (or goggles) and a face shield.

**Skin protection****Hand protection**

Impervious gloves. Confirm with reputable supplier first.

**Other**

Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended. As required by employer code. Rubber apron recommended.

**Respiratory protection**

Where exposure guideline levels may be exceeded, use an approved NIOSH respirator. Respirator should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134), CAN/CSA-Z94.4 and ANSI's standard for respiratory protection (Z88.2).

**Thermal hazards**

Not applicable.

**General hygiene considerations**

Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. When using do not eat or drink. The personal protective equipment listed above is recommended for potential contact with the PRODUCT CONCENTRATE.

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## 9. Physical and chemical properties

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<b>Appearance</b>	Clear
<b>Physical state</b>	Liquid.
<b>Form</b>	Liquid
<b>Colour</b>	Colourless
<b>Odour</b>	Pungent / Irritating.
<b>Odour threshold</b>	2 - 5 ppm Anhydrous w/w air
<b>pH</b>	12 (neat)
<b>Melting point/freezing point</b>	-37°C (20%) and -90°C (31.5%)
<b>Initial boiling point and boiling range</b>	47.8°C (20%) and 22.8°C (31.5%)
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not applicable.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit – upper (%)</b>	Not available.
<b>Vapour pressure</b>	3.75 psi (20°C) and 11 psi (31.5%) @ 15°C
<b>Vapour density</b>	0.6 for ammonia (air=1)
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (Water)</b>	Soluble
<b>Solubility (other)</b>	Soluble in Methanol and Ethanol
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	651 °C (1203.8 °F)
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Explosive properties</b>	Not explosive.
<b>Oxidising properties</b>	Not oxidising.

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## 10. Stability and reactivity

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<b>Reactivity</b>	This product may react with oxidizing agents. Reacts vigorously with acids.
<b>Chemical stability</b>	Stable under recommended storage conditions.
<b>Possibility of hazardous reactions</b>	Hazardous polymerisation does not occur.
<b>Conditions to avoid</b>	Contact with incompatible materials. Heat, open flames, static discharge, sparks and other ignition sources.
<b>Incompatible materials</b>	Acids. Oxidizing agents.
<b>Hazardous decomposition products</b>	May include and are not limited to: Ammonia. Oxides of nitrogen. Hydrogen gas.

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## 11. Toxicological information

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### Information on likely routes of exposure

<b>Inhalation</b>	Toxic if inhaled.
<b>Skin contact</b>	Causes severe skin burns.
<b>Eye contact</b>	Causes serious eye damage.
<b>Ingestion</b>	Causes digestive tract burns. Harmful if swallowed. May cause stomach distress, nausea or vomiting.

**Symptoms related to the physical, chemical and toxicological characteristics**

Burning pain and severe corrosive skin damage. Causes serious eye damage. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result.

**Information on toxicological effects**

**Acute toxicity** Toxic if inhaled. Causes burns. Harmful if swallowed.

**Components****Species****Test results**

Ammonia (CAS 7664-41-7)

**Acute***Dermal*

LD50

Not available

*Inhalation*

LC50

Cat

0.7 mg/L, 1 Hours, HSDB

Mouse

4230 ppm, 1 Hours, ECHA

7.1 mg/L, 10 Minutes, HSDB

3.4 mg/L, 1 Hours, HSDB

3.3 mg/L, 2 Hours, HSDB

Rabbit

7.1 mg/L, 1 Hours, HSDB

Rat

28130 mg/m<sup>3</sup>, ECHA

9850 mg/L

7939 mg/m<sup>3</sup>, 5 Minutes, ECHA

4000 ppm, 1 Hours, European Industrial Gases Association

2000 ppm, 4 Hours, European Industrial Gases Association

7.6 mg/L, 2 Hours, HSDB

5.1 mg/L, 1 Hours, HSDB

*Oral*

LD50

Rat

350 mg/kg, ECHA

**Skin corrosion/irritation**

Causes severe skin burns and eye damage.

**Exposure minutes**

Not available.

**Erythema value**

Not available.

**Oedema value**

Not available.

**Serious eye damage/eye irritation**

Causes serious eye damage.

**Corneal opacity value**

Not available.

**Iris lesion value**

Not available.

**Conjunctival reddening value**

Not available.

**Conjunctival oedema value**

Not available.

**Recover days**

Not available.

**Respiratory or skin sensitisation****Respiratory sensitisation**

Not a respiratory sensitizer.

**Skin sensitisation**

This product is not expected to cause skin sensitisation.

**Germ cell mutagenicity**

Non-hazardous by WHMIS criteria.

**Carcinogenicity**

Non-hazardous by WHMIS criteria.

**Reproductive toxicity**

This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**

Not classified.

**Specific target organ toxicity - repeated exposure**

Not classified.

**Aspiration hazard**

Not an aspiration hazard.

**Chronic effects**

Prolonged inhalation may be harmful.

**Further information**

Not available.

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## 12. Ecological information

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<b>Ecotoxicity</b>	See below		
<b>Ecotoxicological data Components</b>	<b>Species</b>	<b>Test results</b>	
Ammonia (CAS 7664-41-7)			
<b>Aquatic</b>			
Fish	LC50	Chinook salmon (Oncorhynchus tshawytscha)	0.43 - 0.47 mg/L, 96 hours
<b>Persistence and degradability</b>	No data is available on the degradability of this product.		
<b>Bioaccumulative potential</b>	No data available.		
<b>Mobility in soil</b>	No data available.		
<b>Mobility in general</b>	Not available.		
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.		

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## 13. Disposal considerations

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<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations. Review federal, provincial, and local government requirements prior to disposal.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

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## 14. Transport information

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<b>General</b>	Canada: TDG Proof of Classification: In accordance with Part 2.2.1 (SOR/2014-152) of the Transportation of Dangerous Goods Regulations, we certify that the classification of this product is correct as of the SDS date of issue. If applicable, the technical name and the classification of the product will appear below.
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IMDG Regulated Marine Pollutant.

### Transportation of Dangerous Goods (TDG - Canada)

#### Basic shipping requirements:

<b>UN number</b>	UN2672
<b>Proper shipping name</b>	AMMONIA SOLUTION, relative density between 0.880 and 0.957 at 15°C in water, with more than 10% but not more than 35% ammonia
<b>Hazard class</b>	8
<b>Packing group</b>	III

TDG



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## 15. Regulatory information

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<b>Canadian federal regulations</b>	This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.
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#### Canada CEPA Schedule I: Listed substance

Ammonia (CAS 7664-41-7) Listed.

#### Canada Priority Substances List (Second List): Listed substance

Ammonia (CAS 7664-41-7) Listed.

**Export Control List (CEPA 1999, Schedule 3)**

Not listed.

**Greenhouse Gases**

Not listed.

**Precursor Control Regulations**

Not regulated.

**WHMIS status** Controlled**International regulations****Inventory status**

Country(s) or region	Inventory Name	On Inventory (Yes/No)*
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

**16. Other information**

LEGEND	
Severe	4
Serious	3
Moderate	2
Slight	1
Minimal	0

HEALTH	/ 3
FLAMMABILITY	1
PHYSICAL HAZARD	0
PERSONAL PROTECTION	X

**Issue date** 11-April-2017**Revision date** 11-April-2017**Version No.** 01**Other information** For an updated SDS, please contact the supplier/manufacturer listed on the first page of the document.

**Disclaimer** Information contained herein was obtained from sources considered technically accurate and reliable. While every effort has been made to ensure full disclosure of product hazards, in some cases data is not available and is so stated. Since conditions of actual product use are beyond control of the supplier, it is assumed that users of this material have been fully trained according to the requirements of all applicable legislation and regulatory instruments. No warranty, expressed or implied, is made and supplier will not be liable for any losses, injuries or consequential damages which may result from the use of or reliance on any information contained in this document. The information in the sheet was written based on the best knowledge and experience currently available.