

Safety Data Sheet

Conforms to 1907/2006/EC

Version 6

Issue date 10-8-2009

Ammonia, aqueous solution 25 %

1 Identification of the substance/preparation and of the company/undertaking						
Commercial product name	Ammonia, aqueous solution 25 %					
Common chemical name	Ammonia, aqueous solution 25 %					
Synonyms	Ammonium hydroxide; ammonia solution					
Chemical formula	NH4OH					
Use of the substance/preparation	This substance is used in the chemical industry.					
Company name	DSM Agro B.V.					
Company address	P.O. Box 601 6160 AP Geleen The Netherlands					
Company telephone	(31) 46 476 00 55					
Company e-mail	dsm.agro@dsm.com					
Emergency telephone	(31) 46 476 55 55 24/24 hours 7/7 days					
2 Hazards identification						
Physical/chemical hazards	Reacts violently with acids.					
Environmental hazards	Very toxic to aquatic organisms. May cause adverse effects in the aquatic environment due to changes in pH.					
Effect(s) of (over)exposure	Causes burns. Irritating to respiratory system.					
Symptom(s) of (over)exposure						
Inhalation	Exposure can cause lung irritation, chest pain and oedema, which may be fatal. Symptoms may be delayed.					
Ingestion	May cause burns to mouth, throat and stomach.					
Skin contact	Skin contact may produce burns. May cause permanent skin damage.					
Eye contact	Corrosive to eyes. Permanent vision changes, loss of vision or total blindness. Tearing eyes.					
3 Composition/information on ingredients						
Chemical name	CAS no.	EC no.	% (w/w)	Symbol	R phrases	
Water	7732-18-5	231-791-2	75	-	-	
Ammonia	1336-21-6	215-647-6	25	C, N	R34, R50	
<i>EC no. means EINECS or ELINCS number.</i>						
4 First aid measures						
General	Protection of first-aiders: Put on appropriate personal protective equipment (see section 8). Move exposed person to fresh air. Remove contaminated clothing and shoes.					
Ingestion	If swallowed, rinse mouth with water (only if the person is conscious). Do not induce vomiting. If affected person is conscious, give plenty of water to drink. Seek immediate medical attention.					
Inhalation	Remove to fresh air. Keep victim at rest in half-upright position. If not breathing, give artificial respiration. Get medical attention immediately.					
Skin contact	Take off immediately all contaminated clothing. Do not pull clothing loose from skin. Rinse with plenty of running water. Get medical attention immediately.					
Eye contact	Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. Get medical attention immediately.					
Note to physician	Ensure that eyewash stations and safety showers are close to the workstation location.					

5 Fire-fighting measures	
Extinguishing media	
Small fire	Non-combustible. Use extinguishing media suitable for surrounding materials.
Large fire	Non-combustible. Use extinguishing media suitable for surrounding materials.
Extinguishing media not to be used	
Unusual fire and explosion hazards	Under specific conditions the substance can form combustible vapour/air mixtures, which are difficult to ignite.
Hazardous thermal decomposition and combustion products	In case of fire, may produce hazardous decomposition products such as nitrogen oxides (NO, NO ₂), ammonia (NH ₃), amines.
Special fire fighting procedures	Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain. Wear suitable protective clothing. Self-contained breathing apparatus. In a fire or if heated, a pressure increase will occur and the container may burst. (tanks) Use water spray to keep fire-exposed containers cool.
6 Accidental release measures	
Personal precautions	Provide adequate ventilation. Avoid contact with eyes, skin and clothing. Self-contained breathing apparatus. Use suitable protective equipment (section 8). Consult expert immediately.
Environmental precautions	Prevent entry into sewers, basements or confined areas. Dyke if necessary.
Methods for cleaning up	
Small spill and leak	Take up with suitable material. Place in a suitable container. Clean up affected area with a large amount of water.
Large spill and leak	Prevent entry into sewers, basements or confined areas. Dyke if necessary. Absorb spill material with inert material (e.g., dry sand or earth), then place in a chemical waste container. Recycle, if possible. Neutralize the residue with a suitable diluted agent. Absorb with an inert material and place in an appropriate waste disposal container.
Remarks	Wash away remainder with plenty of water.
<i>Note: see section 8 for personal protective equipment and section 13 for waste disposal.</i>	
7 Handling and storage	
Handling	Preferably use in closed systems. Use with adequate ventilation. Use suitable protective equipment. Avoid contact with eyes, skin and clothing.
Storage	Keep away from incompatibles such as acids. Keep in a cool place. Keep container in a wellventilated place.
Specific use(s)	
Packaging materials	Only store in packaging intended/designed for the substance.
<i>Note: See section 10 for stability and reactivity</i>	
8 Exposure controls / Personal protection	
Exposure limit values	
Engineering measures	Use only with adequate ventilation. Local exhaust ventilation should be provided.
Hygienic measures	When using do not eat, drink or smoke. Wash hands after handling compounds and before eating, smoking, using lavatory, and at the end of day.
Personal protection	Production scale
Respiratory system	Self-contained breathing apparatus. (airhood, air fed respirator).
Skin and body	Chemical-resistant protective suit.
Hands	Wear suitable gloves. 4-8 hours (breakthrough time): Nitril rubber, butyl rubber, neoprene, Viton, PVC, Teflon. <1 hour (breakthrough time): Polyethylene, polyvinyl alcohol (PVA) (these materials may degrade). Replace damaged gloves.
Eyes	Full-face mask
Environmental exposure controls	
<i>Advice on personal protection is applicable for high exposure levels.</i>	
<i>Select proper personal protection based on a risk</i>	
9 Physical and chemical properties	
Appearance	Liquid.
Color	Colourless
Odor	Characteristic. Pungent. Ammonia.
Odor threshold	5 to 25 ppm

Molecular weight	Not applicable.			
pH	14			
Boiling point	36 °C			
Melting point/ range	-55 °C			
Flash point	Not applicable.			
Flammability	Not applicable.			
Autoignition temperature	651 °C			
Decomposition temperature	Not applicable.			
Lower explosion limit	Not applicable.			
Upper explosion limit	Not applicable.			
Relative density	Not applicable.			
Density	0.9 g/cm ³ (20°C)			
Loose bulk density	Not applicable.			
Vapour pressure at 20°C	651 °C			
Vapour density	0.8 (Air = 1)			
Partition coefficient n-octanol/water				
Viscosity	1.2 mPa.s (1.2 cP)			
Mean particle size	Not applicable.			
Solubility in water	Easily soluble in cold water			
Miscibility				
Fat solubility				
Conductivity				
Gas group				
Remarks	Vapours may form explosive mixtures with air.(in confined spaces)			
10 Stability and reactivity				
Stability	Stable under recommended storage and handling conditions (see section 7). Reactive material.			
Conditions to avoid	Exposure to sources of heat.			
Materials to avoid	Reactive with metals and acids. Acids , oxidizing substances . Halogens , aluminium , zinc , copper , Gold compounds. Silver oxide and Mercury oxide : (→ compounds, sensitive to mechanical shocks) .			
Hazardous decomposition products	Nitrogen oxides (NO, NO ₂)			
11 Toxicological information				
Acute toxicity				
Ingredient name	Test	Species	Route	Result
Ammonia	LD ₅₀	Rat	Oral	350 mg/kg
	LD _{Lo}	Human	Oral	43 mg/kg
	LD _{Lo}	Cat	Oral	750 mg/kg
Irritation	Hazardous in case of skin contact (corrosive), of eye contact (corrosive), of inhalation (lung irritant, lung corrosive).			
Sensitization	Not available			
Chronic toxicity	Not available			
Carcinogenicity	Not available			
Mutagenicity	Not available			
Reproductive toxicity	Not available			
Remarks	Lacrymator. Inhalation of vapour/mist may result in lung oedema. Symptoms may occur after a latency period has elapsed.			
12 Ecological information				
Ingredient name	Aquatic half-life	Photolysis	Biodegradability	
Ammonia	-	-	Readily	
Mobility	For data on physical state, solubility and vapour pressure see section 9.			
Persistence and degradability	Not available			
Bioaccumulative potential	Not available			
Ecotoxicity	Not available			

13 Disposal considerations						
Responsibility of the receiver to have knowledge of national and local regulations.						
Methods of disposal		Waste must be disposed of in accordance with national and local environmental regulations.				
14 Transport information						
Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
ADR/RID Class	UN 2672	Ammonia solution	8	III		Hazard identification number: 80 Limited quantity: LQ7 CEFIC Tremcard: 80S2672
ADNR Class	UN 2672	Ammonia solution	8	III		-
IMDG Class	UN 2672	Ammonia solution	8	III		Emergency schedules (EmS): F-A, S-B
IATA Class	UN 2672	Ammonia solution	8	III		Quantity limitation passenger aircraft: 1 L : Packaging instructions: Y819 5 L : Packaging instructions: 819 Quantity limitation Cargo aircraft: 60 L : Packaging instructions: 813
15 Regulatory information						
Responsibility of the receiver to have knowledge of national and local regulations.						
EU regulations		 Corrosive, Dangerous for the environment.				
Hazard symbol						
National Fire protection Association (U.S.A)		 Health 3 Fire hazard 4 Reactivity 1 Specific hazard 0				
16 Other information						
Responsibility of the receiver to have knowledge of national and local regulations.						
Risk phrases	R34- Causes burns. R37- Irritating to respiratory system. R50- Very toxic to aquatic organisms.					
Safety phrases	S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice. S36/37/39- Wear suitable protective clothing, gloves and eye/face protection. S45- In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). S61- Avoid release to the environment. Refer to special instructions/Safety data sheets.					
Symbols	C - Corrosive N - Dangerous for the environment.					
Date previous SDS	18-9-2007					
Modifications in this version	Adress change					
References	DSM: WW13844					

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