

M&S safety data sheet NOxAMID 45
date/revised: 24th July 2004
Product: UREA SOLUTION

1. Product: 45 % (by weight) Urea solution for the reduction of nitrogen oxide

Company:

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2. composition/information on ingredients

chemical characterisation

Urea in aqueous solution (45 weight % Urea)
CAS-Nr. 57-13-6 EINECS-Nr.: 200-315-5

3. Hazards identification

None

4. First aid measures

General information:

take off contaminated clothing.

After inhalation of residues of pyrolysis:

quietness, breathe fresh air

After skin contact:

wash thoroughly using copious water.

After eye contact:

flush with copious water thoroughly for about 15 minutes. Eyelids spread.

after swallow:

flush mouth, drink copious water.

5. Fire-fighting measures

Not inflammable.

In case of fire the following can develop: Ammonia

Suitable extinguishing media: water

Special protective equipment for fire-fighters: Protective respirator with independent air supply.

Further information: Disposal of contaminated extinction water is to be effected according to official regulations.

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6. Measures in case of accidental release

Personal precautions: safety glasses

Ecological information: avoid discharging into the canalisation.

Methods for cleaning / absorbing: small quantities can be flushed with water.
Waste water is to be disposed according to regulation.

After spill/leakage/gas leakage:

Solution: Use fluid binding material e.g. saw dust, Terraperl, etc. and dispose according to regulations.

7. Handling and storage

Handling

In case of appropriate use no special measures are necessary.

Fire and explosion prevention: No special measures necessary.

Storage

Keep at temperatures between 15° C and 40° C.

Suitable materials for containers: Polyethylene of high density (HDPE), Polyethylen of low density (LDPE), high-grade steel 1,4301 (V2), high-grade steel 1,4401 (V4), glass, aluminium.

Unsuitable materials for containers: Paper, iron, tin (tinplate)

8. Exposition limitation and personal protection equipment

Additional hints for the organization of technical plants
(see 7)

Components with limited values that are to be surveyed and that refer to the workstation

Personal protection equipment

respiratory protection

Hand guard: safety rubber gloves

Eye protector: eye protectors

Body protection: closed work clothes

General protection and hygiene measures: The precautionary measures usual while handling chemicals are to be considered.

9. Physical and chemical characteristics

Form:	Solution
Colour:	colourless – white
Odour:	slight self-smell, like ammonia
Change of state	
Setting temperature:	under 10° C formation of urea crystals
Boiling point/boiling range:	115 - 120° C

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Ignition temperature:	not applicable
Fire-promoting characteristics:	none
Vapour pressure:	(20° C) 23,3 mbar
Density:	(20° C) 1.126 kg/m ³
Solubility in water:	(20° C) 590 g/l (g urea / l solution)
pH-value:	(at 100 g/l, 20° C) 9-9,5 (DIN/ISO 976)
Viscosity:	(20° C) 5 mPa.s, (DIN/EN/ISO 3219, app. A)

10. Stability and reactivity

Conditions to be avoided:	Decomposition > 70° C
Dangerous reaction during effect of:	Nitrate, nitrites, strong oxidizing agents.
Dangerous decomposition products :	Ammonia

11. Toxicological information

Acute toxicity on immediate effects

Ingestion LD50/oral/rat:	14300 mg/kg related to 100 % Urea
Primary skin irritation/rabbits:	not irritating
Primary mucous membrane irritation/rabbit eye:	not irritating
Sensitizations:	does not work sensitizing

Additional references

According to our experiences an information, the product does not have any damaging effects to one's health when handling it appropriately and using it as intended.

12. Ecological information

Data for elimination

Test method:	OECD 303/ EEC/88/302, C
Analysis method:	specific analytics
Elimination grade:	> 90%
Evaluation:	well biodegradable

Behaviour in ecological compartment

No breathing inhibition of adapted activated sludge.

Ecotoxic effects (related to 100 % urea)

Toxicity to fish: DIN 38412 part 15 Leucisucus idus/LC50: > 6.810 mg/l
DIN 38412 part 8
LCO (highest examined concentration without mortality) /Pseudomonas putida/DIN 38412 part 8: > 10.000 mg/l/96h

13. Disposal considerations

Product:
Use in the agriculture is to be examined.
Waste key No. for the unused product: 51507 (Germany)

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version 0

Uncleaned packing: contaminated packing is to be emptied optimally, then, after an appropriate cleaning, they can be recycled.

14. Transport information

No hazardous materials according to the transportation regulations.
Do not load/store together with: Nitrites, nitrate, strong oxidizing agents.

15. Regulatory information

Marking according to EEC guidelines

After EEC guidelines no marking required for handling.

National regulations

water hazard class: WGK 1 (low hazardous to water) (Germany)

16. Other information

The above data rely on our today's knowledge and do not represent any warranty of characteristics.

It is the own responsibility of the consignee of our products to consider existing laws and regulations.