



Material Safety Data Sheet

Urea Solution

Section 1. Chemical product and company identification

Trade name : Urea Solution
Manufacturer : Yara Canada Inc.
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Montréal, QC
CANADA
H3A 2M8

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Validation date : 2010-11-04.
Print date : 2010-11-04.
Responsible name : Christian Yelle.

In case of emergency : Business Hours 8:30 AM to 4:30 PM
Christian Yelle
Jean-Luc Hébert
Yara Canada Inc.
Contrecoeur, QC
(450) 587-2047

24 Hour Emergency Service:
Canutec
613-996-6666

Section 2. Hazards identification

Physical state : Liquid.
Emergency overview : NOT EXPECTED TO PRODUCE SIGNIFICANT ADVERSE HEALTH EFFECTS WHEN THE RECOMMENDED INSTRUCTIONS FOR USE ARE FOLLOWED.
Potential acute health effects
Eyes : No known significant effects or critical hazards.
Skin : No known significant effects or critical hazards.
Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Ingestion : No known significant effects or critical hazards.
Potential chronic health effects
Chronic effects : No known significant effects or critical hazards.
Carcinogenic effects : No known significant effects or critical hazards.
Mutagenic effects : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.
Over-exposure signs/symptoms
Inhalation : No specific data.
Ingestion : No specific data.
Skin : No specific data.
Eyes : No specific data.

See toxicological information (Section 11)

Section 3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>% by weight</u>
Urea	57-13-6	50

Additional information

Contains:	CAS number	% by weight
Water	7732-18-5	50

Section 4. First aid measures

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical attention if symptoms occur.
- Skin contact** : In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Get medical attention if symptoms occur.
- Inhalation** : Move exposed person to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. Loosen tight clothing such as a collar, tie, belt or waistband. Get medical attention if symptoms occur.
- Ingestion** : Wash out mouth with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.
- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

Section 5. Fire-fighting measures

- Flammability of the product** : May be combustible at high temperature.
- Extinguishing media**
 - Suitable** : Use an extinguishing agent suitable for the surrounding fire.
- Products of combustion** : These products are
 - carbon dioxide
 - carbon monoxide
 - nitrogen oxides
- Fire-fighting media and instructions** : In case of fire, use water spray (fog), foam, dry chemical or CO₂.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Hazardous thermal decomposition products** : These products are: carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂ etc.), ammonia (NH₃).

Section 6. Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment (see Section 8).
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).
- Methods for cleaning up**
 - Small spill** : Stop leak if without risk. Material free from contamination can be used for its original purpose. Move containers from spill area. Dilute with water and mop up if water-soluble or absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

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- Large spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). Dispose of via a licensed waste disposal contractor. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

- Handling** : Avoid contact with eyes, skin and clothing. Avoid breathing vapors, spray or mists.
- Storage** : Keep container tightly closed. Keep container in a cool, well-ventilated area. Keep away from heat and direct sunlight.

Section 8. Exposure controls/personal protection

- Engineering measures** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure eyewash facilities are located close to the working environment.
- Personal protection**
- Eyes** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists or dusts.
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved.
- Respiratory** : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
- Hands** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Occupational exposure limits		TWA (8 hours)			STEL (15 mins)			Ceiling		
Ingredient	List name	ppm	mg/m ³	Other	ppm	mg/m ³	Other	ppm	mg/m ³	Other
Urea	US AIHA 1/2009	-	10	-	-	-	-	-	-	-

Consult local authorities for acceptable exposure limits.

Section 9. Physical and chemical properties

- Physical state** : Liquid.
- Color** : Colorless.
- Odor** : Ammoniacal. [Slight]
- pH** : 10 [Conc. (% w/w): 100%]
- Boiling/condensation point** : Decomposition temperature: 107°C (224,6°F)
- Melting/freezing point** : 15°C (59°F)
- Density (g/cm³)** : 1,14 g/cm³
- VOC** : 50 % (w/w)
- Miscible in water.** : Yes.

Section 10. Stability and reactivity

- Stability and reactivity** : Stable under recommended storage and handling conditions (see section 7).
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Incompatibility with various substances** : Highly reactive or incompatible with the following materials: oxidizing materials and acids.
- Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.
- Hazardous thermal decomposition products** : These products are: carbon oxides (CO, CO₂), nitrogen oxides (NO, NO₂ etc.), ammonia (NH₃).
- Hazardous polymerization** : Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Potential acute health effects

- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Ingestion** : No known significant effects or critical hazards.
- Skin contact** : No known significant effects or critical hazards.
- Eye contact** : No known significant effects or critical hazards.

Product/ingredient name	Result	Species	Dose	Exposure
Urea	LD50 Oral	Mouse	11 g/kg	-
	LD50 Oral	Rat	8471 mg/kg	-

Section 12. Ecological information

- Environmental effects** : No known significant effects or critical hazards.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
Urea	- Acute EC50	3910000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate	48 hours
	- Acute LC50	>1000 mg/L Marine water	Crustaceans - Amphipod - Chaetogammarus marinus - Young - 5 mm	48 hours
	- Acute LC50	16700 to 19600 ug/L Fresh water	Fish - Rohu - Labeo rohita - Egg	96 hours

- Conclusion/Summary** : Not available.

Biodegradability

- Conclusion/Summary** : Not available.

Section 13. Disposal considerations

- Waste disposal** : The generation of waste should be avoided or minimized wherever possible. Significant quantities of waste product residues should not be disposed of via the foul sewer but processed in a suitable effluent treatment plant. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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Consult your local or regional authorities.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees.

Section 14. Transport information

Regulatory information	UN number	Proper shipping name	Class	Packing group	Label	Additional information
DOT Classification	Not regulated.	-	-	-		-
TDG Classification	Not regulated.	-	-	-		-
Mexico Classification	Not regulated.	-	-	-		-

This product is transported at temperatures between 25° and 40°C (80°.-105°F).
Storage and shipping requires insulated tanks and tank cars to prevent crystallization of urea.

Section 15. Regulatory information

- WHMIS (Canada)** : Not controlled under WHMIS (Canada).
- Canadian lists** : **CEPA Toxic substances:** None of the components are listed.
Canadian ARET: None of the components are listed.
Canadian NPRI: None of the components are listed.
Alberta Designated Substances: None of the components are listed.
Ontario Designated Substances: None of the components are listed.
Quebec Designated Substances: None of the components are listed.
- Canada inventory** : All components are listed or exempted.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

Section 16. Other information

- References** : Regulation (EC) No 1272/2008 Annex VI
National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda
Registry of Toxic Effects of Chemical Substances
Atrion International Inc. 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada
- Date of issue** : 2010-11-04.
- Date of previous issue** : No previous validation.
- Version** : 1
- Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information provided in this Material Safety Data Sheet is accurate as at the date of its issue. The information it contains is being given for safety guidance purposes and relates only to the specific material and uses described in it. This information does not necessarily apply to that material when combined with other material(s) or when used otherwise than as described herein. Final determination of the suitability of any material is the sole responsibility of the user. All materials may represent unknown hazards and should be used with caution. Yara International ASA disclaims any liability for loss or damage resulting from the use of any data, information or recommendations set out in this Material Safety Data Sheet.