



Material Safety Data Sheet

Urea (granular)

Section 1. Chemical product and company identification

Trade name : Urea (granular)
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
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Yara Canada Inc.
Contrecoeur, QC
(450) 587-2047

24 Hour Emergency Service:
Canutec
613-996-6666

Section 2. Hazards identification

Physical state : Solid. [Granular solid. Crystalline solid.]
Emergency overview : MAY CAUSE RESPIRATORY TRACT, EYE AND SKIN IRRITATION.
Potential acute health effects
Eyes : Slightly irritating to the eyes.
Skin : Slightly irritating to the skin.
Inhalation : Slightly irritating to the respiratory system. 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 : Adverse symptoms may include the following:
respiratory tract irritation
coughing
Ingestion : No specific data.
Skin : Adverse symptoms may include the following:
irritation
redness

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Eyes : Adverse symptoms may include the following:
irritation
watering
redness

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	98 - 99

Additional information

Contains:	CAS number	% by weight
Biuret	108-19-0	1
Free ammonia < 200ppm		

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 immediately.

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 immediately.

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 immediately.

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 immediately.

Protection of first-aiders : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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 or dry chemical.

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. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. 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 : Material free from contamination can be used for its original purpose. Move containers from spill area. Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

Large spill : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Vacuum or sweep up material and place in a designated, labeled waste container. 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 creating dusty conditions and prevent wind dispersal. Avoid all possible sources of ignition (spark or flame). Avoid contamination by any source including metals, dust and organic materials.

Storage : Store and use away from heat, sparks, open flame or any other ignition source. Avoid contact with combustible materials.

Section 8. Exposure controls/personal protection

Engineering measures : Use only with adequate ventilation. If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants 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. Recommended: safety glasses with side-shields

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. >8 hours (breakthrough time): butyl rubber , natural rubber (latex) , nitrile rubber .

Personal protective equipment (Pictograms) :



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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	: Solid. [Granular solid. Crystalline solid.]
Color	: White.
Odor	: Odorless. Ammoniacal. [Slight]
pH	: 7 to 9,8 [Conc. (% w/w): 100%]
Melting/freezing point	: 132°C (269,6°F)
Specific gravity	: 1,335
Density (g/cm³)	: 0,75 to 0,78 g/cm ³ [20°C (68°F)]
Bulk Density (lbs/cu.ft)	: 46-49
VOC	: 98,5 % (w/w)
Solubility	: Soluble in the following materials: cold water.
Solubility (at 20°C/68°F)	: 51,6 g/l

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, CO ₂), nitrogen oxides (NO, NO ₂ etc.), ammonia (NH ₃).
Hazardous polymerization	: Under normal conditions of storage and use, hazardous polymerization will not occur.

Section 11. Toxicological information

Potential acute health effects

Inhalation	: Slightly irritating to the respiratory system. 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	: Slightly irritating to the skin.
Eye contact	: Slightly irritating to the eyes.

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 : Used in excess quantities the product can cause eutrophication in water.

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure
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Urea	- Acute EC50 3910000 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate - <24 hours	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 : Most inorganic compounds are not biodegradable. The product does not show any bioaccumulation phenomena.

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. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

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.	-	-	-		-

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

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Version : 1

✔ Indicates information that has changed from previously issued version.

Notice to reader

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