



Material Safety Data Sheet

NUTBUILDER

Section 1. Chemical product and company identification

Trade name : NUTBUILDER
Manufacturer : Yara North America, Inc
100 North Tampa Street
Suite 3200
P.O. Box 24926
Tampa, FL 33623
USA
Tel: +1 813 222 5700
Fax: +1 813 875 5735

Validation date : 2010-10-04.
Print date : 2010-10-04.
Responsible name : Bill Easterwood
In case of emergency : Additional Product Information: 813-222-5700
or Chemtrec 24-hours Emergency Resonse: 1-800-424-9300

Section 2. Hazards identification

Physical state : Liquid.
Emergency overview : WARNING!
HARMFUL IF SWALLOWED. CONTAINS MATERIAL THAT MAY CAUSE TARGET ORGAN DAMAGE, BASED ON ANIMAL DATA.
Do not ingest. Wash thoroughly after handling.

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 : Toxic if swallowed.

Potential chronic health effects

Chronic effects : Contains material that may cause target organ damage, based on animal data.
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.
Target organs : Contains material which may cause damage to the following organs: blood, kidneys, lungs, upper respiratory tract, central nervous system (CNS).

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>
manganese carbonate	598-62-9	25 - 75
dicopper oxide	1317-39-1	5 - 10
Urea	57-13-6	5 - 10
zinc oxide	1314-13-2	5 - 10

Additional information

Contains plant nutrients.

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. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.
- 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
metal oxide/oxides
- Fire-fighting media and instructions** : Use foam or all-purpose dry chemical to extinguish. This material is very toxic to aquatic organisms. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- 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.

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. Do not breathe vapor or mist. 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** : 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.
- Large spill** : Stop leak if without risk. Move containers from spill area. Approach release from upwind. 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. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

- Handling** : Avoid contact of spilled material and runoff with soil and surface waterways.
- 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. Recommended: Use safety eyewear designed to protect against splash of liquids. splash goggles CEN: EN166
- Skin** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved.
Recommended: Overall
- 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. Recommended: Filter P2SL (EN 143, 140)
- 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 , nitrile rubber , polymer laminate

Personal protective equipment (Pictograms) :



Product name

Exposure limits

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manganese carbonate

NIOSH REL (United States, 6/2009). Notes: as Mn

STEL: 3 mg/m³, (as Mn) 15 minute(s). Form: Fume

TWA: 1 mg/m³, (as Mn) 10 hour(s). Form: Fume

ACGIH TLV (United States, 1/2009). Notes: as Mn

TWA: 0,2 mg/m³, (as Mn) 8 hour(s).

OSHA PEL (United States, 11/2006). Notes: as Mn

CEIL: 5 mg/m³, (as Mn)

OSHA PEL 1989 (United States, 3/1989). Notes: as Mn

CEIL: 5 mg/m³, (as Mn)

Urea

AIHA WEEL (United States, 1/2009).

TWA: 10 mg/m³ 8 hour(s).

zinc oxide

NIOSH REL (United States, 6/2009).

CEIL: 15 mg/m³ Form: Dust

TWA: 5 mg/m³ 10 hour(s). Form: Dust and fumes

STEL: 10 mg/m³ 15 minute(s). Form: Fume

OSHA PEL (United States, 11/2006).

TWA: 5 mg/m³ 8 hour(s). Form: Fume

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 15 mg/m³ 8 hour(s). Form: Total dust

OSHA PEL 1989 (United States, 3/1989).

STEL: 10 mg/m³ 15 minute(s). Form: Fume

TWA: 5 mg/m³ 8 hour(s). Form: Fume

TWA: 5 mg/m³ 8 hour(s). Form: Respirable fraction

TWA: 10 mg/m³ 8 hour(s). Form: Total dust

ACGIH TLV (United States, 1/2009).

STEL: 10 mg/m³ 15 minute(s).

TWA: 2 mg/m³ 8 hour(s).

Section 9. Physical and chemical properties

Physical state	: Liquid.
Color	: Orange.
Odor	: Odorless.
pH	: 8
Boiling/condensation point	: >100°C (>212°F)
Melting/freezing point	: <0°C (<32°F)
Density (g/cm³)	: 1,749 g/cm ³
VOC	: 7,5 % (w/w)
Solubility (at 20°C/68°F]	: Miscible in water.

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 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** : Toxic if swallowed.
- 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
zinc oxide	LD Intratracheal	Rat	>4979 ug/kg	-
	LD Oral	Rat	>8437 mg/kg	-
	LD50 Intraperitoneal	Rat	>240 mg/kg	-
Urea	LD50 Intraperitoneal	Rat	>5 g/kg	-
	LD50 Intraperitoneal	Rat	567 mg/kg	-
	LD50 Intratracheal	Rat	5300 mg/kg	-
	LD50 Intravenous	Rat	5300 mg/kg	-
	LD50 Oral	Mouse	11 g/kg	-
	LD50 Oral	Rat	8471 mg/kg	-
dicopper oxide	LD50 Oral	Rat	8200 mg/kg	-
	LD50 Subcutaneous	Rat	8200 mg/kg	-
	TDL0 Oral	Rat	750 mg/kg	-
	LD50 Oral	Rat	470 mg/kg	-

Classification

Product/ingredient name	ACGIH	IARC	EPA	NIOSH	NTP	OSHA
zinc oxide	A4	-	-	-	-	-

Section 12. Ecological information

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

Aquatic ecotoxicity

Product/ingredient name	Test	Result	Species	Exposure	
zinc oxide	-	Acute EC50 >1000 ppm Fresh water	Daphnia - Water flea - Daphnia magna - <24 hours	48 hours	
	-	Acute LC50 >320 ppm Fresh water	Fish - Bluegill - Lepomis macrochirus	96 hours	
	-	Acute LC50 1,1 to 2,5 ppm Fresh water	Fish - Rainbow trout, donaldson trout - Oncorhynchus mykiss	96 hours	
	-	Acute LC50 24600 ug/L Fresh water	Daphnia - Water flea - Daphnia magna - Neonate - <24 hours	48 hours	
	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	Fish - Rohu - Labeo rohita -	96 hours	

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dicopper oxide	-	ug/L Fresh water	Egg	
	-	Acute EC50 0,042 mg/L Fresh water	Daphnia - Water flea - Daphnia similis - 6 to 24 hours	48 hours
	-	Acute LC50 0,075 mg/L Fresh water	Fish - Zebra danio - Danio rerio	96 hours
	-	Acute LC50 >173 ppb Marine water	Fish - Sheepshead minnow - Cyprinodon variegatus - Juvenile (Fledgling, Hatchling, Weanling)	96 hours

Conclusion/Summary : The product is not expected to harm the environment when used properly according to directions.

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. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe way. 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. 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

HCS Classification : Toxic material
Target organ effects

U.S. Federal regulations : **TSCA 8(a) IUR**: Distillates (petroleum), hydrotreated light; distillates (petroleum), solvent-dewaxed heavy paraffinic; 2-propenoic acid, homopolymer, sodium salt; xanthan gum
United States inventory (TSCA 8b): Not determined.

SARA 302/304/311/312 extremely hazardous substances: No products were found.
SARA 302/304 emergency planning and notification: No products were found.
SARA 302/304/311/312 hazardous chemicals: dicopper oxide; Urea; zinc oxide
SARA 311/312 MSDS distribution - chemical inventory - hazard identification:
 dicopper oxide: Immediate (acute) health hazard, Delayed (chronic) health hazard; Urea:
 Immediate (acute) health hazard, Delayed (chronic) health hazard; zinc oxide:
 Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: dicopper oxide; zinc oxide

Clean Water Act (CWA) 311: Potassium hydroxide

Clean Air Act (CAA) 112 accidental release prevention: No products were found.

Clean Air Act (CAA) 112 regulated flammable substances: No products were found.

Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs) : Listed

Clean Air Act Section 602 Class I Substances : Not listed

Clean Air Act Section 602 Class II Substances : Not listed

DEA List I Chemicals (Precursor Chemicals) : Not listed

DEA List II Chemicals (Essential Chemicals) : Not listed

Clean Air Act (CAA) 112 regulated toxic substances: No products were found.

SARA 313

	<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
Form R - Reporting requirements	manganese carbonate	598-62-9	25 - 75
	dicopper oxide	1317-39-1	5 - 10
	zinc oxide	1314-13-2	5 - 10
Supplier notification	manganese carbonate	598-62-9	25 - 75
	dicopper oxide	1317-39-1	5 - 10
	zinc oxide	1314-13-2	5 - 10

SARA 313 notifications must not be detached from the MSDS and any copying and redistribution of the MSDS shall include copying and redistribution of the notice attached to copies of the MSDS subsequently redistributed.

State regulations :

- Connecticut Carcinogen Reporting:** None of the components are listed.
- Connecticut Hazardous Material Survey:** None of the components are listed.
- Florida substances:** None of the components are listed.
- Illinois Chemical Safety Act:** None of the components are listed.
- Illinois Toxic Substances Disclosure to Employee Act:** None of the components are listed.
- Louisiana Reporting:** None of the components are listed.
- Louisiana Spill:** None of the components are listed.
- Massachusetts Spill:** None of the components are listed.
- Massachusetts Substances:** The following components are listed: ZINC OXIDE FUME
- Michigan Critical Material:** None of the components are listed.
- Minnesota Hazardous Substances:** None of the components are listed.
- New Jersey Hazardous Substances:** The following components are listed: ZINC OXIDE; COPPER compounds
- New Jersey Spill:** None of the components are listed.
- New Jersey Toxic Catastrophe Prevention Act:** None of the components are listed.
- New York Acutely Hazardous Substances:** None of the components are listed.
- New York Toxic Chemical Release Reporting:** None of the components are listed.
- Pennsylvania RTK Hazardous Substances:** The following components are listed: MANGANESE COMPOUNDS; ZINC OXIDE (ZNO); COPPER COMPOUNDS
- Rhode Island Hazardous Substances:** None of the components are listed.

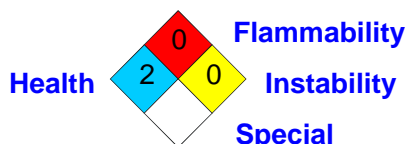
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WARNING: This product contains less than 0.1% of a chemical known to the State of California to cause cancer.

<u>Ingredient name</u>	<u>Cancer</u>	<u>Reproductive</u>	<u>No significant risk level</u>	<u>Maximum acceptable dosage level</u>
distillates (petroleum), solvent-dewaxed heavy paraffinic	Yes.	No.	No.	No.
United States inventory (TSCA 8b)	: Not determined.			

Section 16. Other information

National Fire Protection Association (U.S.A.) :



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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✔ 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.