Conforms to ANSI Z400.1-2004 Standard (United States).

TECHNAFLORA PLANT PRODUCTS LTD.

Material Safety Data Sheet

ROOT 66

1 . Product and company identification

Common name : **ROOT 66**

Material uses : Hydroponic nutrients.

Supplier/Manufacturer : Technaflora Plant Products Ltd.
7261 River Place, 101
Mission, B.C.
Canada, V4S 0A3
Tel. 604-826-4759 / 1-800-586-1211

In case of emergency : CHEMTREC, U.S. : +1-800-424-9300 International: +1-703-527-3887

2 . Hazards identification

Physical state : Liquid.

Odor : Fish.

Color : Amber.

Hazard status : This material is classified as hazardous under OSHA regulations.

Emergency overview : WARNING !

MAY CAUSE EYE IRRITATION.

Slightly irritating to the eyes. Avoid breathing vapor or mist. Avoid contact with eyes. Wash thoroughly after handling.

Routes of entry : Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects

Eyes : Slightly irritating to the eyes.

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 : Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.
Mutagenic effects: Not available.
Teratogenic effects: Not available.

Medical conditions aggravated by over-exposure : None known.

See toxicological information (section 11)

3 . Composition/information on ingredients

United States

Name	CAS number	%
Urea	57-13-6	1 - 5
Monopotassium Phosphate	7778-77-0	1 - 5

4 . First aid measures

Eye contact : Check for and remove any contact lenses. In case of contact with eyes, rinse immediately with plenty of water. Get medical attention if symptoms occur.

Skin contact : Wash with soap and water. Get medical attention if symptoms occur.

Inhalation : If inhaled, remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms appear.

Ingestion : Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if symptoms appear.

Notes to physician : No specific antidote. Medical staff must contact Poison Control Center.

5 . Fire-fighting measures

Flammability of the product : Non-flammable.

Products of combustion : Decomposition products may include the following materials:
carbon oxides
nitrogen oxides
phosphorus oxides
metal oxide/oxides

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

In a fire or if heated, a pressure increase will occur and the container may burst.

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.

6 . Accidental release measures

Personal precautions : 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 : 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.

7 . Handling and storage

Handling : Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Do not get in eyes or on skin or clothing. Do not ingest. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from acids. Empty containers retain product residue and can be hazardous. Do not reuse container.

Storage : Store in accordance with local regulations. Separate from acids. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

8 . Exposure controls/personal protection

United States	
Product name	**Exposure limits**
Urea	**AIHA WEEL (United States, 1/2006).** TWA: 10 mg/m³ 8 hour(s).
Monopotassium Phosphate	**ACGIH TLV (United States).** TWA: 5 mg/m³ 8 hour(s). Form: Dust

Engineering measures : 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.

Eyes : Safety glasses.

Skin : Lab coat.

Respiratory : A respirator is not needed under normal and intended conditions of use.

Hands : Nitrile rubber.

HMIS Code/Personal protective equipment : B

Personal protection in case of a large spill : Safety glasses, goggles or face shield. Impervious gloves. Full suit. Boots. Wear NIOSH-approved self-contained breathing apparatus or equivalent and full protective gear.

Hygiene measures : Wash hands, forearms and face thoroughly after handling compounds and before eating, smoking and using the lavatory and at the end of the day. Follow good industrial hygiene practice.

9 . Physical and chemical properties

Physical state : Liquid.

Color : Amber.

Odor : Fish.

pH : 11 to 12

Solubility : Miscible in water.

10 . Stability and reactivity

Stability and reactivity : The product is stable.

Incompatibility with various substances : Reactive or incompatible with the following materials: oxidizing materials, acids and alkalis.

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Hazardous polymerization : Will not occur.

Conditions of reactivity : Not available.

11 . Toxicological information

Toxicity data

Product/ingredient name	Test / Route	Species	Result
Urea	LD50 Intraperitoneal	Rat	>5 g/kg
	LD50 Intratracheal	Rat	567 mg/kg
	LD50 Intravenous	Rat	5300 mg/kg
	LD50 Oral	Rat	8471 mg/kg
	LD50 Subcutaneous	Rat	8200 mg/kg
Monopotassium Phosphate	LD50 Dermal	Rabbit	>4640 mg/kg

Acute Effects

Eyes : Slightly irritating to the eyes.

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 : Carcinogenic effects: Not classified or listed by IARC, NTP, OSHA, EU and ACGIH.
Mutagenic effects: Not available.
Teratogenic effects: Not available.

12 . Ecological information

Ecotoxicity data

Product/ingredient name	Species	Test	Exposure	Result
Urea	Daphnia	Intoxication	48 hours	Acute EC50 3910 mg/L
	Fish	Mortality	96 hours	Acute LC50 17500 mg/L

Environmental precautions : No known significant effects or critical hazards.

Products of degradation : Not applicable.

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. 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.

14 . Transport information

NAERG : Not applicable.

Regulatory information

UN/ IMDG/ IATA DOT : Not regulated.

15 . Regulatory information

United States

HCS Classification : Target organ effects

U.S. Federal regulations : **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: Urea
SARA 311/312 MSDS distribution - chemical inventory - hazard identification: Urea: Immediate (acute) health hazard, Delayed (chronic) health hazard

Clean Water Act (CWA) 307: No products were found.

Clean Water Act (CWA) 311: No products were found.

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

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: None of the components are listed.
Michigan Critical Material: None of the components are listed.
Minnesota Hazardous Substances: None of the components are listed.
New Jersey Hazardous Substances: None of the components are listed.
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: None of the components are listed.
Rhode Island Hazardous Substances: None of the components are listed.

California prop. 65: No products were found.

International lists : This product, (and its ingredients) is (are) listed on national inventories, or is (are) exempted from being listed, in Australia (AICS), in Europe (EINECS/ELINCS), in Korea (TCCL), in Japan (METI), in the Philippines (RA6969).

16 . Other information

Label requirements (U.S.A.) : MAY CAUSE EYE IRRITATION.

Hazardous Material Information System (U.S.A.) :

HMIS RATING

Health	1
Fire hazard	0
Physical Hazard	0
Personal protection	B

HAZARD RATINGS

4- Extreme
3- Serious
2- Moderate
1- Slight
0- Minimal
See section 8 for more detailed information on personal protection.

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

References : ANSI Z400.1, MSDS Standard, 2004. - Manufacturer's Material Safety Data Sheet. - 29CFR Part1910.1200 OSHA MSDS Requirements. - 49CFR Table List of Hazardous Materials, UN#, Proper Shipping Names, PG.

Date of previous issue : 09/02/2011
Date of issue : 03/30/2007
Version : 2

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.