

MATERIAL SAFETY DATA SHEET

PRODUCT: Growth QR 16-4-8

Manufacturer: 3Tier Technologies LLC
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Longwood, FL 32750
Phone: (877) 226-7498

Analysis: Formula 16-4-8
Date: February 13, 2012
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Emergency #: (407) 808-4653

SECTION I - MATERIAL IDENTIFICATION

CHEMICAL NAME AND SYNONYMS:	Nitrogen, phosphorus, potassium mixed fertilizer solution	TRADE NAME AND SYNONYMS:	3Tier QR 16-4-8 Growth QR 16-4-8 N-P-K Mixed Fertilizer
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CHEMICAL FAMILY: Inorganic Salt FORMULA: Fertilizer Salt Complex

SECTION II - INGREDIENTS AND HAZARDS

	%	Hazard Data	Typical Grade	%	Hazard Data
Total Nitrogen as N	15 - 18	N / A	16		N / A
Total Phosphorus as P ₂ O ₅	3 - 5	N / A	4		N / A
Total Potassium as K ₂ O	7 - 9	N / A	8		N / A

Balance - Water & Trace impurities

SECTION III - PHYSICAL DATA

Boiling point at 1 atm, degree F	-212	Specific gravity (H ₂ O = 1)	1.1 - 1.4
Vapor pressure at (n/m Hg)	N/A	Evap. Rate (not applicable = 1)	
Vapor density (Alt = 1)	N/A	Volatiles, % by volume	N/A
Water solubility	Complete	Molecular weight	N/A
pH	7.5 - 8.5		
Appearance & Odor:	Dark liquid, no apparent odor and/or very mild ammonia		

SECTION IV - FIRE AND EXPLOSION DATA

			LOWER	UPPER
Flash Point and Method Not Applicable	Autoignition Temp. Not Applicable	Flammability Limits Not Applicable	Not Applicable	Not Applicable

Extinguishing media: N P K Solutions are non-flammable. If involved in a fire, use water.

Special fire fighting procedures: None

Unusual fire and explosion hazards: None

SECTION V - HEALTH HAZARD INFORMATION

Effects of overexposure: N P K Solutions are considered to be low health hazards

FIRST AID:	
Eye Contact:	Flush eyes immediately and thoroughly with water for at least 15 minutes. If irritation persists, get medical attention.
Skin Contact:	Flush skin immediately and thoroughly with water. If irritation persists, get medical attention. (Should only affect if allergic).
Inhalation:	Generally not considered an inhalation hazard.
Ingestion:	Do not induce vomiting. Get medical attention immediately. Offer small amounts of water or milk.

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SECTION VI - REACTIVITY DATA

Stability	Stable	X	Conditions to avoid: When heated (e.g. in a fire) may give off ammonia gas
	Unstable		
Incompatibility (Materials to Avoid):		Strong Acids or Alkali and Strong Oxidizers	
Hazardous decomposition products:		Carbon Monoxide and Carbon Dioxide	
Hazardous Polymerization	May occur		Conditions to avoid:
	Will not occur	X	

SECTION VII - SPILL, LEAK AND DISPOSAL PROCEDURES

SPILLS, LEAKS: (Steps to be taken): Since N - P - K is a fertilizer, it may promote eutrophication in waterways. In the case of spill, contain spill and maximize recovery. Mop up or pump up properly in metal or plastic containers.

WASTE DISPOSAL METHODS: Disposal of N - P - K, fertilizer may be subject to federal, state, and local regulations. User of this product should review their operations in terms of applicable federal, state and local laws and regulations, then consult with an appropriate regulatory agent before discharging or disposing.

SECTION VIII - SPECIAL PROTECTION INFORMATION

Respiratory protection (Specific Type) Respirators are not required under normal ventilated conditions. If heated to evolve ammonia, use appropriate protection. If misted by heat agitation or spray, use a mist respiration approved by NIOSH. Do not use single-use type.

Ventilation:	Local Exhaust:	Adequate	Special:
	Mechanical General:	Only if heated	Other:
Protective Gloves:	Rubber Gloves (only if allergies)	Eye Protection: Safety glasses are recommended	
Other protective equipment and precautions:		Not generally required	

SECTION IX - SPECIAL PRECAUTIONS AND COMMENTS

Storage and handling Information: None

Other Precautions: None

DOT Class: Not Applicable

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