MATERIAL SAFETY DATA SHEET

PART 1 *What is the material and what do I need to know in an emergency?*

1. PRODUCT IDENTIFICATION

TRADE NAME (AS LABELED): GoldStart 6-24-6

MANUFACTURER'S NAME: Nutra-Flo Company

ADDRESS: 1919 Grand Avenue

Sioux City, IA 51106

EMERGENCY PHONE: Chemtrec 1-800-424-9300 24 hrs a day

BUSINESS PHONE: 712-277-2011

DATE OF PREPARATION: July 18, 2002

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	% w/w	EXPOSURE LIMITS IN AIR					
			ACGIH		OSHA			
			TLV TWA	STEL	PEL	STEL	IDLH	NIOSH REL
Diammonium Pyrophosphate ($(NH_4)_2H_2P_2O_7$)	13597-86-9	5-10	NE	NE	NE	NE	NE	NE
Potassium Orthophosphate, Monobasic (KH_2PO_4)	7778-77-0	10-15	NE	NE	NE	NE	NE	NE
Potassium Orthophosphate, Dibasic (K_2HPO_4)	7758-11-4	1-5	NE	NE	NE	NE	NE	NE
Dipotassium Pyrophosphate ($K_2H_2P_2O_7$)	14691-84-0	1-5	NE	NE	NE	NE	NE	NE
Ammonium Orthophosphate, Dibasic [$(NH_4)_2HPO_4$]	7783-28-0	20-25	NE	NE	NE	NE	NE	NE
Urea [$(NH_2)_2CO$]	57-13-6	0-5	NE	NE	NE	NE	NE	NE
Water	7732-18-5	40-55	NE	NE	NE	NE	NE	NE

NE*=NOT ESTABLISHED

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: Material is an irritant to the eyes, skin, and mucous membranes. Ingestion can cause severe gastric distress.	HAZARDOUS MATERIAL INFORMATION SYSTEM NFPA HAZARD RATING LEAST: 0 SLIGHT: 1 MODERATE: 2 HIGH: 3 EXTREME: 4			
SYMPTOMS OF OVER EXPOSURE BY ROUTE OF EXPOSURE:	HEALTH (BLUE)	2		
INHALATION: Mist inhalation can result in irritation to the lungs, coughing, choking, difficulty in breathing, lung congestion, or chemical burns. CHRONIC: Same as above.	FLAMMABILITY (RED)	0		
CONTACT WITH SKIN or EYES: EYES: Can result in irritation, tearing, and chemical burns. Overexposure could result in blindness. SKIN: Can result in irritation, itching, tingling sensation, and chemical burns.	REACTIVITY (YELLOW)	1		
SKIN ABSORPTION: Not expected	PROTECTIVE EQUIPMENT			
	EYES	RESPIRATORY	HANDS	BODY
INGESTION: May result in nausea, vomiting, diarrhea, bluish skin color, digestive disorders, or chemical burns.	SEE SECTION 8	SEE SECTION 8	SEE SECTION 8	SEE SECTION 8
	For Routine Industrial Application			

HEALTH EFFECTS OR RISKS FROM EXPOSURE (An explanation in lay terms):
Eye and skin irritation will happen if the material gets onto the person or in their eye. If swallowed, the person will get sick at their stomach and vomit. Mist inhalation will cause coughing or choking.

PART II *What should I do if a hazardous situation occurs?*

4. FIRST-AID MEASURES

IF INHALED: Move to fresh air. If the person is having trouble breathing, administer oxygen and get medical assistance.

IN CASE OF EYE CONTACT:. Flush eyes with water immediately for 15-30 minutes. Consult a physician if irritation persists or vision is blurred.

IN CASE OF SKIN CONTACT: Remove contaminated clothing and flush skin with water immediately for 15-30 minutes. Wash affected areas with soap when available. If irritation persists, get medical attention.

IN CASE OF INGESTION: Call the poison control center and follow instructions. If victim is vomiting, roll on side to prevent choking.

5. FIRE-FIGHTING MEASURES

FLASH POINT, °C (method):	Not flammable	
AUTOIGNITION TEMPERATURE, °C:	Not flammable	
FLAMMABLE LIMITS (in air by volume, %):	Not flammable	

FIRE EXTINGUISHING MATERIALS: **Use material suitable for surrounding fire. Several ingredients are actually used as fire retardants.**

Water Spray:	X	Carbon Dioxide:	X		
Foam:	X	Dry Chemical:	X	Halon:	X

SPECIAL FIRE FIGHTING PROCEDURES: Wear full protective clothing and self-contained breathing apparatus. Use water spray to cool containers and control vapors.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Can release ammonia , nitrous oxide fumes, oxides of carbon and phosphorous oxide fumes.

6. ACCIDENTAL RELEASE MEASURES

SPILL AND LEAK RESPONSE: For small or incidental releases, the minimum personal protective equipment should be chemical resistant gloves and goggles. Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. Gas masks with ammonia canister or SCBA may be required. For large spills, contain by diking with soil or other non-combustible absorbent material. Dilution with water will reduce the possibility of vapor release. Keep material out of sewers, storm drains, and surface waters. Comply with all applicable governmental regulations on spill reporting, handling, and disposal of waste. You may be able to reuse the recovered liquid.

PART III *How can I prevent hazardous situations from occurring?*

7. HANDLING and STORAGE

WORK PRACTICES AND HYGIENE PRACTICES: Avoid getting chemicals **ON YOU** or **IN YOU**. Wash hands after handling chemicals. Do not eat or drink while handling chemicals. Remove any contaminated clothing and wash before reuse.

HANDLING PRACTICES: Wear gloves and other protective clothing when handling this material. Do not get in eyes, on skin, or on clothing.

STORAGE PRACTICES: Store in a cool, dry, well ventilated area away from incompatible materials. This product can be stored in well maintained vessels constructed of mild steel, stainless steel, fiberglass, polypropylene, or polyethylene. Valves should be inspected on a regular basis and replaced as needed to prevent leakage. Flanged valves, instead of screwed valves, are recommended on storage tanks. Aluminum or aluminum alloys should **NOT** be used to store or transport this produce. Bronze, brass, or copper alloys are **NOT** compatible with this product.

VENTING: Vessels should be vented in accordance with the manufacturer's recommendations. The vent should be constructed as to prevent rainwater from entering the vessel.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation.

RESPIRATORY PROTECTION: None normally required. However, if mists are present, wear a NIOSH approved canister respirator, supplied-air respirator, or SCBA.

EYE PROTECTION: Tight fitting goggles should be worn unless a full face respirator is used. Never wear contact lens when handling chemicals.

HAND PROTECTION: Wear chemical resistant gloves.

BODY PROTECTION: Wear chemical resistant clothing. If splashing is expected, wear a chemical resistant apron or suit.

OTHER PROTECTIVE MEASURES: An eyewash and safety shower should be available for use.

9. PHYSICAL AND CHEMICAL PROPERTIES

SPECIFIC GRAVITY @ 72^0 F:	1.33 – 1.35	SALTOUT TEMPERTURE:	<0 DEG F
SOLUBILITY IN WATER:	100%	BOILING POINT:	ND
VAPOR PRESSURE, mm Hg @ 25°C:	NA	pH:	6.0-6.5

APPEARANCE AND COLOR: Material is a yellow-gold colored liquid.

HOW TO DETECT THIS SUBSTANCE (warning properties): This liquid is odorless. There are no warning properties for this material.

10. STABILITY AND REACTIVITY

STABILITY: Material is stable
CONDITIONS TO AVOID: High temperatures
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Oxidizers, hypochlorites, strong bases, and strong acids
HAZARDOUS POLYMERIZATION: Will not occur.

PART IV *Is there any other useful information about this material?*

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: Urea – Oral Rat LD50: 8471 mg/Kg
Potassium Pyrophosphate – Oral Rat LD50: 2980 mg/Kg
SUSPECTED CANCER AGENT: No
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Inhalation of mists could aggravate pre-existing respiratory ailments and trigger allergies. Skin contact could aggravate pre-existing dermatitis.

Dermal Exposure: Skin irritant.
Ingestion Exposure: Nausea and vomiting. Large dose ingestion can cause heart and kidney problems.
Inhalation Exposure: Irritation of nose and throat. Coughing and shortness of breath.

RECOMMENDATIONS TO PHYSICIANS: Treat symptoms.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: Material will biodegrade.
EFFECT OF MATERIAL ON PLANTS OR ANIMALS:.

Ammonium Orthophosphate LC50 (Rainbow trout) 96 hours 26500 ug/L
Potassium Orthophosphate, Dibasic (Algal Toxicity): 310000 ug/L 20 hours Blue-green algae
Potassium Orthophosphate, Monobasic (Invertebrate Toxicity): 2400 ug/L 28 hours LC50 Polychaete
Tetrapotassium Pyrophosphate (Invertebrate Toxicity): 94000 ug/L 24 hours LC50 Zebra Mussel
Urea LC50 (Mozambique tilapia) 96 hours 22500 ug/L

EFFECT OF CHEMICAL ON AQUATIC LIFE: Not tested.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations.
EPA WASTE NUMBER: As shipped, material would not be a hazardous waste per 40 CFR section 261, Subpart C and D.

14. TRANSPORTATION INFORMATION

PROPER SHIPPING NAME:	This material is not regulated under 49 CFR Part 172
HAZARD CLASS NUMBER AND DESCRIPTION:	None
UN IDENTIFICATION NUMBER:	None
PACKING GROUP:	None
DOT LABEL(S) REQUIRED:	None
EMERGENCY RESPONSE GUIDE NUMBER:	171
RQ:	None

15. REGULATORY INFORMATION

SARA REPORTING REQUIREMENTS: None of the materials listed as components or ingredients are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

TSCA INVENTORY STATUS: Ingredients of this material are listed on the TSCA inventory.
MARINE POLLUTANT: This product does not contain any material listed as a Marine Pollutant under 49 CFR 172.101.
CALIFORNIA PROPOSITION 65: No
CERCLA REPORTABLE QUANTITIES (RQ): None
STATE REGULATORY INFORMATION: NA

LABELING (Precautionary Statements): WARNING! EYE AND SKIN IRRITANT

16. OTHER INFORMATION

The information and recommendations herein are taken from data contained in independent, industry recognized references including, NIOSH, OSHA, ANSI , STN, and NFPA. This information is furnished free of charge and is based on data believed to be reliable. It is intended for use by persons possessing technical knowledge at their own discretion and risk. Since actual use is beyond our control, no guarantee, express or implied, and no liability is assumed by Nutra-Flo Company in conjunction with the use of this information. Nothing herein is to be construed as a recommendation to infringe any patents.