SAFETY DATA SHEET		
Dyna Flo 0-0-37	Date Prepared: 3/20/2014	Replaces: All Previous

SECTION 1. IDENTIFICATION

Product Name:	Dyna Flo 0-0-37 (Liquid KOH)
Synonyms:	Caustic Potash Liquid, Potassium Hydroxide Solution, FLO0037, Liquid Potash
Use:	Agricultural, Liquid Fertilizer
Manufacturer:	Chemical Dynamics, Inc. 4206 Business Lane Plant City FL 33566
Phone:	813-752-4950
Chemtrec (Emergency) Phone:	800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Pictogram	Signal Word	Hazard Class	Hazard Category	Hazard Statement
	**DANGER**	Corrosive to Metals	Cat 1	May be corrosive to metals
		Skin Corrosion Eye Damage	Cat 1A Cat 1	Causes severe skin burns and serious eye damage
		Acute Toxicity	Cat 4	Harmful if swallowed

Precautionary Statements:

Prevention: Do not breathe vapors, mists or sprays. Wash thoroughly after handling. Wear protective gloves, protective clothing, chemical splash proof goggles, and face protection. Do not eat, drink or smoke when handling this product.

Response: If swallowed: rinse mouth, Do NOT induce vomiting. Immediately call doctor or poison center.

If on skin (or hair): Take of immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse.

If inhaled: Remove person to fresh air and keep comfortable for breathing. Immediately call doctor or poison center.

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call doctor or poison center. Absorb spillage to prevent material damage.

Storage: Store locked up. Store is a corrosive resistant container (316L stainless steel, polypropylene, polyethylene and fiberglass, see Section 7 of SDS).

Disposal: Dispose of contents/containers in accordance with local/regional/national regulations (See Section 13 of SDS). Containers may be triple rinsed and offered for recycling.

SECTION 3. COMPOSITION

Material	CAS #	EINECS #	%WT
Potassium Hydroxide	1310-58-3	215-181-3	45%
Water	7732-18-5	231-791-2	balance

See product label for guaranteed analysis.

SECTION 4. FIRST AID MEASURES

Ingestion:	Rinse mouth. Do NOT induce vomiting. Drink large amounts of water. Never give anything by mouth to an unconscious person. Get medical attention immediately.
Skin Contact:	Immediately rinse skin with flooding amounts of water/shower while removing all contaminated clothing. Wash contaminated clothing before reuse. Seek medical attention immediately.
Inhalation:	Remove person to fresh air and keep comfortable for breathing. If not breathing, give artificial respiration. Seek medical attention immediately.
Eye Contact:	Rinse cautiously with water for 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing eyes during transport to hospital.
Acute Exposure Symptoms:	Harmful if swallowed or inhaled. Immediately seek medical attention. Potassium hydroxide solution is highly corrosive to all tissues with which it comes in contact. It can cause severe skin burns and ulcerations. Vapors or mists cause severe burns to the eyes, nose, throat, and respiratory tract. Inhalation of dust may be fatal due to spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and severe pulmonary edema. Eye exposure can cause severe damage and blindness. When ingested, it may result in severe burns to the mouth, throat and stomach, pain, nausea and vomiting, swelling of the larynx and subsequent suffocation, perforation of the gastrointestinal tract.
Chronic Exposure Symptoms:	Not available

SECTION 5. FIRE FIGHTING MEASURES

Extinguishing Media:	This product is non-flammable. Use appropriate media for surrounding fire. Cool containers with water spray from a distance to avoid rupture due to thermal expansion.
Specific Hazards:	Potassium hydroxide solution is not flammable however the following hazards can occur when exposure to extreme heat: release of potassium oxides and/or hydrogen gas. The material is corrosive to aluminum, zinc and tin producing highly flammable hydrogen gas. For safety, avoid water spray with full jet to prevent spread of product.
Protective Equipment and Precautions for Fire-Fighters:	Wear self-contained breathing apparatus (SCBA) and full protective gear. Avoid inhaling combustion products. Equipment should be thoroughly decontaminated after use. If safe to do so, remove containers form path of fire. Do not approach containers suspected to be hot. Fire run-off should be contained to prevent possible environmental damage.
NFPA Rating:	Health: 3, Fire: 0, Reactivity: 1

SECTION 6. ACCIDENTAL RELEASE MEASURES	
Precautions:	Corrosive liquid. Isolate area. Keep unnecessary personnel away. Evacuate upwind if necessary. Avoid splashing or spraying.
Protective Equipment:	Impervious gloves (rubber, neoprene or nitrile) and boots, full body chemical resistant suit with NIOSH approved respirator or SCBA. Chemical splash-proof goggles and face shield. After clean-up operations, decontaminate and launder all protective clothing and equipment before storing and reusing.
Containment:	Stop flow of material if safe to do so. Dike area with diatomaceous earth or sand and maximize recovery. Residue can be neutralized with dilute acetic acid or citric acid. Prevent spillage from entering drains or waterways. Any release to the environment may be subject to reporting requirements. RQ = 1000 lbs.
Clean Up:	Pump into a suitable tank or absorb with diatomaceous earth or sand. Sweep up and place into suitable containers for agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations (See Section 13 of SDS).

SECTION 7. HANDLING AND STORAGE	
Precautions for safe handling:	Avoid contact with skin and eyes. Avoid inhalation of vapor or mist. Do not eat, drink or use tobacco products when handling this material. Apply product in open areas. Keep away from children and pets. Do not contaminate feed, seed or any water sources. Launder work clothes frequently and separate from other laundry. When diluting always pour product into water and not vice versa. Spillage can be slippery.
Conditions for safe storage:	Store locked up. Store in corrosion resistant containers. Do not store in aluminum containers or use aluminum fittings or piping. Store in a well-ventilated, cool, dry place, away from sources of intense heat, or where freezing is possible. Wear personal protective equipment when risk of exposure occurs. Large storage tanks should have secondary containment and electrically grounded. Keep containers tightly closed when not in use. Do not let product go below 35°F. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged. Compatible storage materials include but are not limited to 316L stainless steel, polypropylene, polyethylene and fiberglass.
Incompatibilities:	The material is corrosive to aluminum, zinc and tin (or their alloys) producing highly flammable hydrogen gas. Also incompatible with acids, halogens, halocarbons, alcohols, acid chlorides and acid anhydrides. This material reacts violently with acids. Store separately from acids. Keep away from intense heat or fire.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION			
Component Exposure Limits:	Potassium Hydroxide KOH	Not Established	PEL, OSHA
		Not Established	STEL, OSHA
		2 mg/m3	TLV, ACGIH
		Not Established	IDLH, NIOSH
		2 mg/m3	REL-C, NIOSH
		Not Established	STEL, NIOSH
Engineering Controls:	Provide local exhaust ventilation and wash facilities. Facilities storing or utilizing this material must be equipped with an eyewash facility and a safety shower.		
Personal Protective Equipment:	Eyes: Chemical splash-proof goggles (where splashing is possible) and face shield. Skin: Impervious gloves (rubber, neoprene or nitrile) and impervious boots, long sleeved clothing and chemically resistant apron under non-misting conditions. Respiratory: None required for ambient air concentrations (i.e. in the open under normal, non-misting agronomic conditions). Respiratory protection required in the event of a spill in an enclosed area or when misting/heavy vapor formation can occur. Use NIOSH approved respiratory protective as well as a full body chemical suit.		

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES			
Appearance:	Clear, colorless liquid		
Odor:	Odorless	**UEL / LEL:**	Not Applicable
Odor Threshold:	Not Available	**Vapor Pressure:**	2 mm Hg @ 20°C (68°F, low volatility)
pH:	>14	**Density:**	1.45-1.47 g/cm^3
Melting/Freezing Point:	-28°C (-20°F)	**Solubility:**	Water
Boiling Point:	132°C (270°F)	**Log$_{ow}$:**	Not Available
Flash Point:	Not Applicable	**Auto Ignition Temp:**	Not Applicable
Evaporation Rate:	Similar to water	**Decomposition Temp:**	Not Available
Flammability (Solid/Gas):	Not Applicable	**Viscosity**	3.7 cP

SECTION 10. STABILITY AND REACTIVITY	
Reactivity:	Product is highly alkaline and caustic.
Chemical Stability:	Hydroscopic. Stable under normal conditions.
Possibility of Hazardous Reactions:	Hazardous polymerization will not occur.
Conditions to avoid:	High temperatures
Incompatible Materials:	Acids, halogens, halocarbons, alcohols, acid chlorides and acid anhydrides. Reacts violently with acids. Corrosive to aluminum, zinc and tin producing highly flammable hydrogen gas.
Hazardous Decomposition Products:	Potassium oxide from thermal decomposition and hydrogen gas from reaction with metals.

SECTION 11. TOXILOGICAL INFORMATION	
Acute Toxicity:	LD50 oral (rat): 273 mg/kg (100% Basis)
Irritation:	Skin (human): 50 mg/24hrs – Severe Skin (rabbit): 50 mg/24hrs – Severe Eye (rabbit): 1 mg/ 24hrs - Moderate
Likely Routes of Exposure:	Inhalation of mist, ingestion, eye and skin contact.
Symptoms and Signs of Exposure:	Eyes: Can cause severe burns and tissue damage, possible vision loss and blindness. Moderate eye irritation leading to inflammation is possible. Repeated or prolonged exposure to irritants may produce conjunctivitis. Skin: Causes severe skin burns and ulceration; Burning, itching, redness, inflammation, swelling of exposed tissue; Severe skin irritation after prolonged or repeated exposure. Contact dermatitis can develop which is characterized by skin redness and ulceration. Onset of pain may be delayed by several minutes or hours. Ingestion: Severe burns to the mouth, throat and stomach, pain, nausea and vomiting, swelling of the larynx and subsequent suffocation, perforation of the gastrointestinal tract. Inhalation: Vapors or mists are highly corrosive to the upper respiratory tract. Inhalation may be fatal due to spasm, inflammation and edema of the larynx and bronchi, chemical pneumonitis and severe pulmonary edema. Symptoms of inhalation exposure include burning, choking, coughing, wheezing, laryngitis, shortness of breath, headache, nausea or vomiting.
Chronic Effects:	Not Available
Carcinogenetic:	None of this product's components are listed by ACGIH, OSHA, IARC, NIOSH, NTP or California Prop 65 as carcinogenic.
Mutagenicity:	Not Available
Reproductive Toxicity:	Not Available
SECTION 12. ECOLOGICAL INFORMATION	
Environmental Fate:	Expected to decompose in the environment. Exposure to aquatic organisms can be severe due to the high pH of the product. In high concentrations, this product may be harmful to both terrestrial and aquatic plant and animal life.
Other Adverse Effects:	Not harmful to ozone layer
Ecotoxicity:	LC50 (48hrs): Gambusia affinis (Western Mosquitofish: 80 mg/L. Freshwater; static May cause shifts in water pH outside the range of pH 5-10. This change may be toxic to aquatic organisms.

SECTION 13. DISPOSAL CONSIDERATIONS	
General Information:	As packaged, this product is a D002 corrosive waste per 40 CFR 261; applicable to wastes containing this product.
Disposal Instructions:	Agronomical land application at recommended rates or dispose of in accordance with local/regional/national regulations. Dispose of in accordance with product characteristics at time of disposal.

SECTION 14. TRANSPORT INFORMATION	
This material is hazardous as defined by 49 CFR 172.101 by the US Department of Transportation	
Proper Shipping Name:	Potassium Hydroxide Solution
Hazard Class:	8
UN Identification #:	1814
Packing Group:	II
Required Label(s):	Corrosive
Emergency Response Guide Number:	154
Marine Pollutant:	No

SECTION 15. REGULATORY INFORMATION	
TSCA Inventory Status	All intentional ingredients listed on the TSCA inventory.
DSCL (EEC) Status	All intentional ingredients listed on the DSCL inventory.
United States – SARA Hazard Category:	This product has been reviewed according to the EPA Hazard Categories promulgated under Sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act (SARA) and is considered, under applicable definitions, to meet the following categories: Fire – No, Pressure – No, Acute – Yes, Chronic – No, Reactive – Yes
SARA Title III Information:	This product contains the following substances subject to the reporting requirements of Title III (EPCRA) of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:
Potassium Hydroxide CAS No. 1310-58-3	CERCLA RQ (pounds): 1000 lbs SARA Reporting, 302: No SARA Reporting, 304: No SARA Reporting, 313: No
Federal Insecticide, Fungicide, and Rodenticide Act	This product is not a pesticide.
State Regulations:	Other state regulations may apply. Check individual state requirements.
Potassium Hydroxide CAS No. 1310-58-3	Appears on one or more of the following state hazardous substance lists: CA, FL, NJ, MA, MN, PA, TX

SECTION 16. OTHER INFORMATION

Date of Revision:	3/20/2014, revision prepared in accordance with 29 CFR 1910.1200 Appendix D to meet Global Harmonization Standards.
Disclaimer:	The information contained in this SDS refers only to the specific material designated and does not relate to any process or use with any other materials. This information is based on data believed to be accurate and reliable as of the date hereof. It is intended for use by persons possessing technical knowledge at their own discretion and risk. Because safety standards and regulations are subject to change and because Chemical Dynamics, Inc. has no continuing control over the material, those handling, storing or using the material should satisfy themselves that they have current information regarding the particular way the material is handled, stored or used and that the same is done in accordance with federal, state and local law. No warranty, expressed or implied, and no liability is assumed by Chemical Dynamics, Inc. in conjunction with the use of this information. Nothing herein is to be construed as a recommendation to infringe any patents.