



**Lynn Peavey Company**  
**10749 W. 84th Terrace**  
**Lenexa, KS 66214**

**1. Product and Supplier Information**

Product Name: 1 Gallon Ninhydrin Solution (15078)      MSDS Number: LP Ninhydrin FP Solution  
 8 ounce Ninhydrin Solution (05060)      Publication Date: May 27, 2013  
 Product Number: 15078, 05060 respectively      Replaces: New  
 Purpose: Help reveal hidden fingerprints  
 Supplier: Lynn Peavey Company      Phone: 913-888-0600  
 10749 W. 84th Terrace      Fax: 913-495-6757  
 Lenexa, KS 66214      Email: [lpv@peaveycorp.com](mailto:lpv@peaveycorp.com)  
 Product Information: 913-888-0600      MSDS prepared by: Richard Miller 812-344-5983  
 Transportation Emergency: 800-424-9300 (U.S. and North America)  
 (703) 527-3887 (Outside U.S. Collect Calls Accepted)

Note: The purpose of this MSDS is to provide safe handling, shipping and disposal information for users of the product. It is not intended to, nor does it, provide complete or extensive toxicological data on the product or its components. Users who require this information are referred to primary suppliers of the ingredients of interest.

**2. Hazards Identification**

**EMERGENCY OVERVIEW**

Specific Physical Form: Liquid  
 Odor, Color, Grade: Clear, colorless, liquid. Slight sour ethereal odor.  
 Immediate health, physical, and environmental hazards:

**POTENTIAL HEALTH EFFECTS**

Eye Contact: Contact with the eyes during product use is not expected to result in significant irritation.  
 Skin Contact: Contact with the skin during product use is not expected to result in significant irritation.  
 Inhalation: If thermal decomposition occurs: May be harmful if inhaled.  
 Ingestion: No health effects are expected.

**POTENTIAL ENVIRONMENTAL EFFECTS**

This substance has chemical moieties that are resistant to biodegradation and is likely to only undergo partial biodegradation in the environment. The high potential of this substance to move from water to the atmosphere means its potential to bioconcentrate is likely to disappear rapidly from aerobic environments. Take precautions to prevent direct release of this product to the environment.

**3. Composition and Information on Ingredients**

CAS #	Sara 313?		Material or Component	%	RQ#	Prop. Expos Exposure Limits			
	On?	dm				65?	TWA*	STEL*	WEEL*
64-17-5	No	NA	Ethanol	0.85	None	Yes	1000 ppm	NE	NE
64-19-7	No	NA	Acetic acid	0.57	5000	No	10 ppm	15 ppm	NE
485-47-2	No	NA	Ninhydrin crystals	0.85	None	No	NE	NE	NE
163702-07-6	No	NA	Methyl nonafluorobutyl ether	20 - 80	None	No	NE	NE	750 ppm
163702-08-7	No	NA	Methyl nonafluoroisobutyl ether	20 - 80	None	No	NE	NE	750 ppm

\*TWA= Time Weighted Average; STEL= Short Term Exposure Limit; WEEL= Workplace Employee Exposure Level  
 NE= Not Established "De minimis" = Threshold reporting limit for SARA 313 for this material.  
 NA = Not Available

**4. First Aid**

Inhalation: Remove individual to fresh air. If not breathing, give artificial respiration or oxygen as appropriate. Seek medical attention at once. If thermal decomposition occurs: May be harmful if inhaled.

Skin Contact: Flush skin with water for 15 minutes and remove contaminated clothing. Wash shoes and clothing before reuse.

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids apart.

Ingestion: Immediately drink water to dilute. Induce vomiting if deemed appropriate. Consult a physician immediately. Never give anything by mouth to an unconscious person.

**5. Fire Fighting Measures****Flammability Summary (OSHA):**

FLAMMABLE PROPERTIES (Based on fluorinated components)

Autoignition temperature 405 °C (ASTM E659-84)

Flash Point No Flash Point

Flammable Limits (LEL) None detected

Flammable Limits (UEL) None detected

**EXTINGUISHING MEDIA**

Non-combustible. Choose material suitable for surrounding fire.

**PROTECTION OF FIRE FIGHTERS**

Special Fire Fighting Procedures: Water may be used to blanket the fire.

Exposure to extreme heat can give rise to thermal decomposition.

Wear full protective equipment (Bunker Gear) and a self-contained breathing apparatus (SCBA).

Unusual Fire and Explosion Hazards: None anticipated.

No unusual effects are anticipated during fire extinguishing operations. Avoid breathing the products and substances that may result from the thermal decomposition of the product or the other substances in the fire zone.

Keep containers cool with water spray when exposed to fire to avoid rupture.

Note: See STABILITY AND REACTIVITY (SECTION 10) for hazardous combustion and thermal decomposition information.

Hazardous Combustion Products:

**6. Accidental Release Measures****Personal Protection for Emergency Situations: Ventilate the area with fresh air.****Environmental precautions**

For larger spills, cover drains and build dikes to prevent entry into sewer systems or bodies of water.

Collect the resulting residue containing solution. Place in a metal container approved for transportation by appropriate authorities. Dispose of collected material as soon as possible.

**Clean-up methods**

Observe precautions from other sections.

Contain spill. Working from around the edges of the spill inward, cover with bentonite or available inorganic absorbent material. Mix in sufficient absorbent until it appears dry

Collect as much of the spilled material as possible. Clean up residue with an appropriate organic solvent. Seal the container.

In the event of a release of this material, the user should determine if the release qualifies as reportable according to local, state, and federal regulations.

## 7. Handling and Storage

### HANDLING

Contents may be under pressure, open carefully. For industrial or professional use only. Avoid contact with oxidizing agents. No smoking: Smoking while using this product can result in contamination of the tobacco and lead to the formation of the hazardous decomposition products mentioned in the Reactivity Data section of this MSDS.

Avoid continuous exposure of the material to extreme conditions of heat, i.e., above 150 C (welding, open flame, or equipment failure). Avoid exceeding a watt density of 50 watts/inch<sup>2</sup> from a heater surface. Under certain conditions, continuous exposure to 150 C results in slight decomposition of this product and therefore, is a very conservative use temperature threshold.

### STORAGE

Store away from acids. Store away from heat. Store away from oxidizing agents. Keep container tightly closed. Store away from strong bases.

## 8. Exposure Controls and Personal Protection

### 24 ENGINEERING CONTROLS

In situations where the material might be exposed to extreme overheating due to misuse or equipment failure, use with appropriate local exhaust ventilation to maintain levels of thermal decomposition products below their exposure guidelines.

### PERSONAL PROTECTIVE EQUIPMENT (PPE)

#### Eye/Face Protection

As a good industrial hygiene practice: Avoid eye contact.

#### Skin Protection

As a good industrial hygiene practice: Avoid prolonged or repeated skin contact.

Gloves made from Nitrile Rubber are recommended.

#### Respiratory Protection:

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection.

Prevention of Swallowing: Wash hands after handling and before eating.

## 9. Physical Data (Based on pure major component)

Specific Physical Form:	****	****	Liquid
Odor, Color, Grade:			Clear, colorless, liquid. Slight ethereal odor. (Plus slight vinegar note)
General Physical Form:			Liquid
Autoignition temperature			405 °C (ASTM E659-84)
Flash Point			No flash point
Flammable Limits (LEL)	****	****	None detected
Flammable Limits (UEL)			None detected
Boiling Point			61 °C @ 760 mmHg
Density			1.5 g/ml
Vapor Density			8.6. AIR=1
Vapor Pressure	****	****	202 mmHg @ 25 °C
Specific Gravity			1.5
pH			Not Applicable
Melting point			-135 °C <
Solubility In Water			12 ppm
Evaporation rate	****	****	49 [Ref Std: BUOAC=1]
Volatile Organic Compounds			Exempt (USA)
Kow - Oct/Water partition coef.			3.90 @ 30 C
Percent volatile			0.99+
VOC Less H <sub>2</sub> O & Exempt Solvents			Exempt (USA)
Viscosity			0.6 centipoise @ 23 °C

## 10. Stability and Reactivity

Stability: Stable.

Materials and Conditions to Avoid: None known

Conditions to avoid: None known.

Materials to avoid: Strong acids, strong bases, strong oxidizing agents.

Hazardous Polymerization: Will not occur.

Hazardous Decomposition or By-Products

Carbon monoxide      Carbon dioxide      Hydrogen Fluoride      Perfluoroisobutylene (PFIB)

Toxic Vapor, Gas, Particulate

Hazardous Decomposition: Perfluorinated Acid Fluorides

Hydrogen Fluoride has an ACGIH Threshold Limit Value of 3 parts per million

(as fluoride) as a Ceiling Limit and an OSHA PEL of 3 ppm of fluoride as an

eight hour Time-Weighted Average and 6 ppm of fluoride as a Short Term

Exposure Limit. The odor threshold for HF is 0.04 ppm, providing good warning

properties for exposure. Decomposition of this product at temperatures above

300 degrees C can form perfluoroisobutylene (PFIB), but PFIB will only accumulate

with continuous exposure to excessive heat in a sealed vessel. The formation rate

for PFIB is about 1000 times less than the rate for primary thermal decomposition

products such as HF. During normal use conditions, no health hazard is associated

with the use of this material due to PFIB exposure.

## 11. Toxicological Information

Component Animal Toxicology	Ethanol	Acetic acid	Ninhydrin	CAS 163702-07-6/163702-08-7
Oral LD50 mg/kg value (rat):	7060	3310	600	>5g/kg
Dermal LD50 mg/kg value (rbt):	20000	50 mg/24hrs/mild	No data	No significant absorption
Inhalation LC50 ppm value:	31623	5620 ppm/1hr/mus	No data	>100,000 ppm(rat/4 hr)

Skin Irritation: This material is expected to be non irritating.

Eye Irritation: This material is expected to be very slightly irritating.

Reproductive and Developmental Toxicity:

Mutagenicity: Mutagenic effects have been observed on tests with laboratory animals. (Acetic acid)

Carcinogenicity: No component classifiable as a Human Carcinogen

Fluorinated components: 90 Day Inhalation Study in rats: NOEL = 7500 ppm.

### Ecological Toxicity Values:

**AQUATIC TOXICITY: Testing results indicate that this product has insignificant toxicity to aquatic organisms at its saturation point (Lowest LC50, EC50, or IC50 > substance water solubility). This substance is highly volatile and has a high Henry's Law constant and is thus expected to move rapidly through vaporization from solution in an aquatic compartment or from a soil surface in a terrestrial compartment to the atmosphere.**

### ATMOSPHERIC FATE: Zero Ozone Depletion Potential (ODP).

Atmospheric Lifetime: approximately 4.1 yrs.

Global Warming Potential (GWP): 280 (100 year ITH, IPCC1995 method).

Global Warming Potential (GWP): 320 (100 yr ITH, IPCC2001 method).

Atmospheric degradation products are expected to include:

for methyl nonafluoroisobutyl ether: predominantly isoperfluorobutyric acid, CO<sub>2</sub>, HF, and perhaps also CF<sub>3</sub>COOH; for methyl nonafluorobutyl ether: n-perfluorobutyric acid, CO<sub>2</sub> and HF.

**12. Ecological Information**

## ECOTOXICOLOGICAL INFORMATION

Test Organism	Test Type
Fathead Minnow, Pimephales promelas	96 hours Lethal Concentration 50%
Green algae, Selenastrum capricornutum	96 hours Inhibitory Concentration 50%
Water flea, Daphnia magna	48 hours Effect Concentration 50%

## CHEMICAL FATE INFORMATION

Test Type	Result	Protocol
28 days Biological Oxygen Demand	See Section 3.3.	OECD 301D - Closed Bottle Test
Log of Octanol/H <sub>2</sub> O part. Coeff.	22 % weight 3.54	Other methods

**13. Disposal Considerations**

Waste Disposal Method: Reclaim if feasible.

Incinerate in an industrial or commercial facility in the presence of a combustible material or dispose of waste product in a facility permitted to accept chemical waste.

Combustion products will include HF. Facility must be capable of handling halogenated materials.

To reclaim or return, check product label for contact.

EPA Hazardous Waste Number (RCRA): Not regulated

Since regulations vary, consult applicable regulations or authorities before disposal.

**14. Transportation Information**

Proper Shipping Name, Hazard Class, UN/NA Number Packing Group, Emergency Response Guide Number

Not regulated per U.S. DOT, IATA or IMO.

**15. Regulatory Information**

## US FEDERAL REGULATIONS

311/312 Hazard Categories:

Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No Immediate Hazard - Y Delayed Hazard - No

## CHEMICAL INVENTORIES

The components of this product are in compliance with the notification requirements of TSCA. and the chemical registration requirements of ELINCS, METI, AICS, KECI, PICCS, CICS, CEPA.

## ADDITIONAL INFORMATION

This MSDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29CFR 1910.1200.

**16. Additional Information****NFPA Hazard Classification**

Health: 3 Flammability :0 Reactivity: 0 Special hazards: None

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

**HMIS Hazard Classification**

Health: 0 Flammability :0 Reactivity: 0 Protection X- See PPE Section

Hazardous Material Identification System (HMIS®) hazard ratings are designed to inform employees of chemical hazards in the workplace. These ratings are based on the inherent properties of the material under expected conditions of normal use and are not intended for use in emergency situations. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint and Coatings Association (NPCA).

This Material Safety Data Sheet (MSDS) has been prepared in compliance with the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200, and ANSI Z400.1-2004. This information should be provided to all who will use, handle, store, transport or otherwise be exposed to this product. We believe this information to be reliable and up to date as of its publication date., but make no warranty that it is. If this MSDS is more than three years old you should contact the supplier to make sure the information is still current.