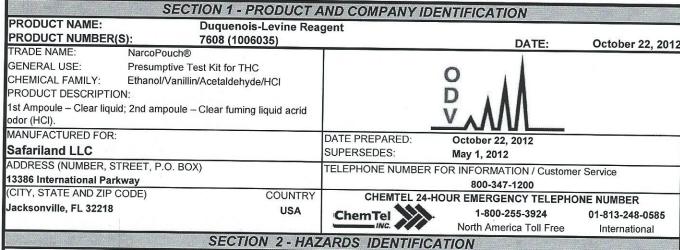
# MATERIAL SAFETY DATA SHEET

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## EMERGENCY OVERVIEW

Irritation of eyes, nose, and throat. Splashes in the eyes or on the skin will cause severe skin burns. Inhalation of acid vapors may be injurious to the lungs. Repeated or prolonged exposure to dilute solutions of acid may cause irritation of the skin. Repeated or prolonged exposure to mists or vapors of Hydrochloric Acid may cause erosion of teeth, chronic irritation of the eyes, or chronic inflammation of the nose, throat, and bronchial tubes. 2 ppm (9.78 mg/m3) 60 minute ceiling NIOSH.

## POTENTIAL HEALTH EFFECTS

## INHALATION:

Irritation of throat. Inhalation of acid vapors may be injurious to the lungs and with repeated inhalation chronic irritation/inflammation of nose, throat, and bronchial tubes.

#### SKIN:

Irritation and or burns by direct contact. Delayed onset contact dermatitis is also possible with chronic repeated exposure to ampoule 1 chemicals.

#### **EYES**

Chronic irritation of eyes, corneal burns are possible with exposure to Hydrochloric Acid (Ampoule 2).

#### INGESTION:

Severe irritation and ulceration of the gastrointestinal tract. Vomiting and diarrhea are also symptoms.

## CARCINOGENICITY:

NTP? Yes- Acetaldehyde.

ESIS?

IARC MONOGRAPHS? Yes,75-07-0

OSHA REGULATED?

CALIFORNIA, Prop.65? Yes CAS#75-07-0 (Acetalde

Yes CAS#75-07-0 (Acetaldehyde) are known carcinogens listed in the State of California. Yes CAS #75-07-0 EINECS #200-836-8 Acetaldehyde=Limited evidence of carcinogenic effect.

	SECTION	3 - HAZARDOUS	INGREDIENTS		7 7 7 7 TAKE
Hazardous Components	% (by Weight)	CAS#	EINECS#	Hazard Symbol	RISK PHRASES (Full Text Section 15)
Ethanol 1st ampoule	90.3	64-17-5	200-578-6	F	R11
Vanillin: 1st ampoule	2.4	121-33-5	204-465-2	None	None
Acetaldehyde: 1st ampoule	1.3	75-07-0	200-836-8	F+, Xi, Xn	R12, R36/37,R40
Hydrochloric Acid, 2nd Ampoule	100%	7647-01-0	231-595-7	T, C, Xi	R23, R35, R37
Notes: Hazard symbols and risk ph	rases based on ma	aximum listed concentrat	ion of each hazardous ind		A 25/25/45/45/45

SECTION 4 - FIRST AID MEASURES

## INHALATION:

Remove to fresh air, apply CPR if victim is unconscious, administer oxygen, seek immediate medical attention.

## EYES:

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Seek immediate medical attention.

#### SKIN

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical attention.

## INGESTION:

If swallowed, give plenty of water to dilute substances, do not induce vomiting; if conscious, give large quantities of water immediately to dilute the Hydrochloric Acid. If vomiting occurs spontaneously, keep the head below the waist to avoid aspiration. Call a physician immediately.

# MATERIAL SAFETY DATA SHEET

PRODUCT NAME: **Duquenois-Levine Reagent** PRODUCT NUMBER(S): 7608 (1006035) DATE: October 22, 2012 SECTION 5 - FIRE FIGHTING MEASURES GENERAL HAZARDS: Hydrochloric Acid, 2nd Ampoule is highly corrosive to most metals with evolution of flammable Hydrogen gas. EXTINGUISHING MEDIA: Use extinguishing media appropriate for surrounding fire and foam,  ${
m CO_2}$  or dry chemical for Ethanol in Ampoule 1. FIRE FIGHTING PROCEDURES: None applicable, not flammable UNUSUAL FIRE AND EXPLOSION HAZARDS: Under fire conditions wearing NIOSH/MSA or European EN-149 approved SCBA's or acid gas=organic vapor respirators is required. HAZARDOUS COMBUSTION PRODUCTS: Hydrogen Chloride gas, Hydrogen Cyanide gas, sulfur oxides, and organic vapors. SECTION 6 - ACCIDENTAL RELEASE MEASURES STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED: Wear protective equipment; ventilate area; cover a Hydrochloric Acid spill with sodium carbonate. Add water if necessary to form a slurry. Scoop up slurry. Can use ODV part number 910 soda ash. SECTION 7 - HANDLING AND STORAGE PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Store and handle according to packaged instructions. Store in cool, well ventilated area. Keep away from reactive materials. Avoid breathing vapor and prevent vapor accumulation in enclosed areas. SECTION 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION NIOSH OSHA HAZARDOUS COMPONENTS TWA ppm TWA mg/m3 STEL ppm STEL mg/m3 TLV/TWA ppm TWA mg/m3 STEL ppm | STEL mg/m3 Ethanol 1st ampoule 1000 1900 1000 1000 1900 Vanillin: 1st ampoule NE NE 2 NE Acetaldehyde: 1st ampoule 25 2000 IDLH 25 Ceiling 200 360 Hydrochloric Acid, 2nd Ampoule. 2 50 IDLH 2 5 7 PERSONAL PROTECTION RESPIRATORY PROTECTION: NIOSH/MSA or European EN-149 approved acid gas respirator for a minor Hydrochloric Acid spill clean-up or a NIOSH/MSA or European EN-149 approved organic vapor respirator. PROTECTIVE GLOVES: Impervious gloves (neoprene, nitrile) required when any contact potential with contents exists. EYE PROTECTION: Do not get in eyes, wear safety glasses with side shield splash protection or chemical goggles. OTHER PROTECTIVE CLOTHING OR EQUIPMENT: An eye wash fountain and safety shower should be readily available where the potential for contact exists. WORK / HYGIENIC PRACTICES: Wash thoroughly after handling. Be prepared to neutralize and absorb spilled acid. SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES APPEARANCE AND ODOR VAPOR PRESSURE 1st Ampoule – Clear liquid; 2nd ampoule – Clear fuming liquid NR acrid odor (HCI). SPECIFIC GRAVITY (WATER = 1) BOILING POINT / BOILING RANGE SOLUBILITY IN WATER 62% for Hydrochloric Acid. FLASH POINT VISCOSITY 56°F for Ethanol (Ampoule 1) NA

VAPOR DENSITY (AIR = 1)

EVAPORATION RATE (BUTYL ACETATE = 1)

FLAMMABLE LIMITS

NR

LEL: NR

AUTO-IGNITION TEMPERATURE

UEL: NR

SECTION 10 - STABILITY AND REACTIVITY

PRODUCT NAME:

**Duquenois-Levine Reagent** 

PRODUCT NUMBER(S):

7608 (1006035)

DATE:

October 22, 2012

STABILITY

STABLE

X CONDITIONS TO AVOID:

Excessive heat, light exposure, contact with incompatible materials.

INCOMPATIBILITY (MATERIALS TO AVOID):

Acid contact with most metals corrodes them severely and forms flammable hydrogen gas. Contact of acid gas or liquid with any alkali or active metal may develop enough heat to cause a fire in adjacent combustible material. Cobalt (II) Thiocyanate when strongly acidified by contact with Sulfuric Acid and when also heated can produce deadly Hydrogen Cyanide gas.

HAZARDOUS DECOMPOSITION OR BYPRODUCTS:

Hydrogen Chloride gas, Hydrogen Cyanide gas, sulfur oxides, and organic vapors.

HAZARDOUS POLYMERIZATION:

CONDITIONS TO AVOID

Will not occur.

None related to polymerization.

SECTION 11 - TOXICOLOGICAL INFORMATION						
Hazardous Components	CAS # EINECS #	LD50 of Ingredient (Specify Species and Route)	LC50 of Ingredient (Specify Species)			
Ethanol 1st ampoule	64-17-5	3450 mg/kg (ORAL, MOUSE).				
	200-578-6		NE			
Vanillin: 1st ampoule	121-33-5	Oral, rat: LD50 = 1580 mg/kg.				
	204-465-2		NE			
Acetaldehyde: 1st ampoule	75-07-0	Oral, rat: LD50 = 661 mg/kg.	Inhalation, rat: LC50 = 13300 ppm/4H.			
	200-836-8					
Hydrochloric Acid, 2nd Ampoule	7647-01-0	Oral, rabbit: LD50 = 900 mg/kg.	Inhalation, rat: LC50 = 3124 ppm/1H.			
	231-595-7					

## SECTION 12 - ECOLOGICAL INFORMATION

Harmful to enviroment in large quantities. Cloroform may bioaccumulate in soil, water, and organisms.

# SECTION 13 - DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD:

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

# SECTION 14 - TRANSPORT INFORMATION

GROUND SHIPMENT WITHIN USA (DOT):

PROPER SHIPPING NAME:

None - Exempted Qty.

CLASS/ PACK GROUP/ LABELING: Class3(8) with Excepted Qty. marking on package. No class 3 or 8 label required.

NOTES: When shipped under 49CFR173.4a, This product is exempt from other labeling and waybill requirements.

GROUND SHIPMENTS TO AND WITHIN CANADA (TDG):

PROPER SHIPPING NAME:

None - Limited Quantity (within Canada), See above for US to Canada

CLASS/ PACK GROUP/ LABELING: Phrase "Ltd. Qty." on package. No additional requirements.

NOTES: TDG only used for shipment within Canada, shipments from the US can follow DOT regulations. See TDG Sections 1.17 and 9.

AIR SHIPMENTS (ICAO/IATA):

PROPER SHIPPING NAME:

None - (Classified under UN1170 Ethanol Solution, UN 1789 Hydrochloric Acid - Overall Excepted Qty. E2)

CLASS/ PACK GROUP/ LABELING: Class3(8) with Excepted Qty. marking on package. No class 3 or 8 label required.

NOTES:

This product is exempt from other labeling and waybill requirements.

OCEAN SHIPMENTS (IMDG):

PROPER SHIPPING NAME:

None

CLASS/ PACK GROUP/ LABELING: Class3(8) with Excepted Qty. marking on package. No class 3 or 8 label required.

NOTES: Shipping Paper required with statement "Dangerous Goods in Excepted Quantities" and number of packages.

ALL SHIPMENTS EXCEEDING EXCEPTED QUANTITY / ALTERNATIVE SHIPPING INFORMATION:

PROPER SHIPPING NAME:

UN 3316, Chemical Kit

CLASS/ PACK GROUP/ LABELING:

Class 9, Pack Group III. Miscellaneous Label

NOTES:

Full documentation required.

Note: Transportation information provided is for reference only. Client is urged to consult CFR 49 parts 100 - 177, IMDG, IATA, TDG & UN information manuals for detailed regulations and exceptions covering specific container sizes, packaging materials and methods of shipping. Information above does not account for overpacks or outer packings with multiple hazardous materials; consult shipper when multiple materials are shipped. Consult regulations for maximum outer packaging and overpack requirements

PRODUCT NAME: **Duquenois-Levine Reagent** PRODUCT NUMBER(S): 7608 (1006035) DATE: October 22, 2012 SECTION 15 - REGULATORY INFORMATION TSCA (USA - Toxic Substance Control Act): Ingredients are listed. SARA TITLE III (USA - Superfund Amendments and Reauthorization Act): Acute Health: Chronic Health: Yes Reactive: No Fire: No Sudden Release of Pressure: 313 REPORTABLE INGREDIENTS: This material contains Acetaldehyde (CAS#75-07-0) and Hydrochloric Acid (CAS# 7647-01-0) which are subject to the reporting requirements of Section 313 of SARA Title III & 40 CFR Part 373. CERCLA (USA - Comprehensive Response Compensation and Liability Act): CAS# 75-07-0: 1000 lb final RQ; 454 kg final RQ. CAS# 7647-01-0: 5000 lb final RQ; 2270 kg final RQ. CCPR (Canadian Controlled Products Regulations): Not Listed. California Prop 65, Safe Drinking Water and Toxic Enforcement Act of 1986: WARNING! This product contains a chemical known to the State of California to cause cancer. Acetaldehyde. State Right to Know: Acetaldehyde: MA, NJ, PA.; Ethanol MA, NJ, PA, RI. Hydrochloric Acid ILL, MA, NJ, PA, RI. CIDL (Canadian Ingredient Disclosure List): Not Listed. CDSL / NDSL (Canadian Domestic Substances List / Non-Domestic Substances List): Listed on DSL. EINECS (European Inventory of Existing Commercial Chemical Substances): Referenced. WGK Water Quality Index: 2 (overall 2 ampoules). RISK PHRASES: SYMBOL(S) REQUIRED FOR EU LABEL SAFETY PHRASES: R11: Highly Flammable. For Hydrochloric Acid Ampoule #2: R20/21/22: Harmful by inhalation, in S1/2: Keep locked up and out of the reach of contact with skin and if swallowed. R23: Toxic by inhalation. S9: Keep container in a well ventilated place. R32: Contact with acids liberates very Xn: Harmful S26: In case of contact with eyes, rinse toxic gas. immediately with plenty of water and seek R35: Causes severe burns. medical advice. R37: Irritating to respiratory system. S36/37/39: Wear suitable protective clothing, R38: Irritating to skin. gloves and eye/face protection. R40: Limited evidence of a S45: In case of accident or if you feel unwell, carcinogenic effect. seek medical advice immediately (show the label where possible). SECTION 16 OTHER INFORMATIO

_egend: N/A = Not App	olicable N/D = Not Determ	ined N/E = Not Established	N/R = Not Reported	
HMIS HAZARD RATINGS	HEALTH: FLAMMABILITY: PHYSICAL HAZAF PERSONAL PROT	RD: ECTIVE EQUIPMENT:	3 0 0 H	0 = INSIGNIFICANT 1 = SLIGHT 2 = MODERATE 3 = HIGH
REVISION SUMMARY:	reviewed 10/22/20	12.		4 = EXTREME

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The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of need that information is current, applicable and suited to the circumstances of use. Vendor assumes no responsibility for injury to vendee or third persons responsibility for injury caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, vendor assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Any questions regarding this product should be directed to the manufacturer of the product as described in Section 1.