SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI, Canadian WHMIS Standards, European Union CLP EC 1272/2008 and the Global Harmonization Standard

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY UNDERTAKING

TRADE/MATERIAL NAME: NICOTINE GUM

CHEMICAL NAME: For Nicotine: Pyridine, 3-(1-methyl-2-pyrrolidinyl)-, (S)-
CHEMICAL FAMILY: For Active Ingredient: Nicotine Complexed with Methacrylic Acid Polymer and Divinylbenzene
FORMULA: For Nicotine: $C_{10}H_{14}N_2$
HOW SUPPLIED: Chewable Gum
PRODUCT USE: Human Pharmaceutical
USES ADVISED AGAINST: Non-Pharmaceutical Use

SUPPLIER OF THE SAFETY DATA SHEET

RESPONSIBLE PARTY U.S.:	**ACTAVIS, INC.**
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NOTE: ALL United States Occupational Safety and Health Administration Standard (29 CFR 1910.1200), U.S. State equivalent Standards, Canadian WHMIS [Controlled Products Regulations], EU Directives through EC 1907: 2006, and European Union CLP EC 1272/2008, required information is included in appropriate sections based on the U.S. ANSI Z400.1-2010 format. This compound has been classified in accordance with the hazard criteria of the countries listed above.

DATE OF PREPARATION: January 31, 2013 **DATE OF REVISION:** New

2. HAZARDS IDENTIFICATION

EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: According to Article 1, item 5 (a) of CLP Regulation (EC) 1272/2008, medicinal products in the finished state for human use, as defined in 2001/83/EC, are excepted from classification and other criteria of 1272/2008.

EU 67/548/EEC LABELING AND CLASSIFICATION: According to Article 1 of European Union Council Directive 92/32/EEC, medical products in the finished state for human use (as defined by European Union Council Directives 67/548/EEC and 87/21/EEC) are not subject to the regulations and administrative provisions of European Union Council Directive 92/32/EEC.

EMERGENCY OVERVIEW:

Product Description: This product consists of square chewing pieces.

Health Hazards: In this workplace, this product presents minimal health hazards. In therapeutic use this product has caused bad taste, nausea, dyspepsia, and stomatitis. This product contains nicotine, which is highly toxic by skin contact. Although not expected to be a significant route of exposure for this product, skin exposure should be avoided. Ingestion after chewing may be harmful. Therapeutic used presents a hazard of hyper-sensitization and dependency. Animal tests of nicotine compounds indicate possible reproductive effects. Therapeutic use of Nicotine is known to cause adverse symptoms on the cardiovascular system, central nervous system, and skin. Additional information on toxicity can be found in Section 11 (Toxicity Information).

Flammability Hazards: This product requires substantial pre-heating before ignition occurs. When involved in a fire, this product may decompose and produce irritating vapors and toxic compounds (including carbon and nitrogen oxides).

Reactivity Hazards: This product is not reactive.

Environmental Hazards: Nicotine compounds are toxic to marine organisms and may cause long-term damage in an aquatic environment.

Emergency Considerations: Emergency responders should wear appropriate protection for the situation to which they respond.

3. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	EINECS #	% w/w	LABEL ELEMENTS EU Classification (67/548/EEC) GHS & EU Classification (1272/2008 EC) Risk Phrases/Hazard Statements/Symbol
ACTIVE INGREDIENT				
Nicotine Polacrilex	96055-45-7	Not Listed	Proprietary	SELF-CLASSIFICATION EU (67/548/EEC): Classification: Toxic, Dangerous for the Environment Risk Phrases: R24, R25, R51/53 Symbol: T, N EU/GHS CLP 1272/2008: Classification: Acute Oral Toxicity Cat. 3, Acute Dermal Toxicity Cat. 3, Aquatic Chronic Toxicity Cat. 2 Hazard Statement Codes: H301 + H311, H411 Hazard Symbols/Pictograms: GHS06, GHS09

See Section 16 for full classification information of compound.

3. COMPOSITION and INFORMATION ON INGREDIENTS (Continued)

CHEMICAL NAME	CAS #	EINECS #	% w/w	LABEL ELEMENTS EU Classification (67/548/EEC) GHS & EU Classification (1272/2008 EC) Risk Phrases/Hazard Statements/Symbol
Nicotine Polacrilex consists of the following components:				
Nicotine	54-11-5	200-193-3	15-20	EU (67/548/EEC): Classification: Very Toxic, Dangerous for the Environment Risk Phrases: R27, R25, R51/53 Symbol: T+, N EU/GHS CLP 1272/2008: Classification: Acute Dermal Toxicity Cat. 1, Acute Oral Toxicity Cat. 3, Aquatic Chronic Toxicity Cat. 2 Hazard Statement Codes: H310, H301, H411 Hazard Symbols/Pictograms: GHS06, GHS09
Water	7732-18-5	231-791-2	1-5	EU (67/548/EEC): No Classification Applicable EU/GHS 1272/2008: No Classification Applicable
Polacrilin Potassium	50602-21-6	Polymer Exception	Balance	EU (67/548/EEC): No Classification Applicable EU/GHS 1272/2008: No Classification Applicable
EXCIPIENTS				
Dreycol Gum Base (Arabic Gum)	9000-01-5	Not Listed	Proprietary	EU 67/548 Classification: Not Applicable EU/GHS CLP 1272/2008 Classification: Not Applicable
Sodium Carbonate	497-19-8	207-838-8	Proprietary	SELF-CLASSIFICATION EU (67/548/EEC): Classification: Harmful Risk Phrases: R20 Symbol: Xn EU/GHS 1272/2008: Classification: Acute Oral Toxicity Cat. 5, Acute Inhalation Toxicity Cat. 4 Hazard Statement Codes: H303, H332 Hazard Symbols/Pictograms: GHS07
Sorbitol	50-70-4	200-061-5	Proprietary	EU 67/548 Classification: Not Applicable EU/GHS CLP 1272/2008 Classification: Not Applicable

See Section 16 for full classification information of compound.

4 FIRST-AID MEASURES

PROTECTION OF FIRST AID RESPONDERS: First-aid responders should not attempt to treat victims of exposure to this material without adequate personal protective equipment. Rescuers should be taken for medical attention, if necessary.

DESCRIPTION OF FIRST AID MEASURES: Victim(s) must be taken for medical attention. Remove victim(s) to fresh air, as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation, when necessary. Take copy of label and SDS to physician or other health professional with victim(s).

INHALATION: Not a likely route of exposure.

SKIN EXPOSURE: If the compound contaminates the skin and adverse effect occurs, begin decontamination with running water. Minimum flushing is for 20 minutes. Do not interrupt flushing. Remove exposed or contaminated clothing, taking care not to contaminate eyes. Seek medical attention if adverse effect occurs after flushing.

EYE EXPOSURE: Not a likely route of exposure.

INGESTION EXPOSURE: If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting. Rinse mouth with water immediately. Victim should drink large quantities of water. If milk is available, victim should drink it after drinking water. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow.

IMPORTANT SYMPTOMS AND EFFECTS: See Sections 2 (Hazard Identification) and 11 (Toxicological Information).

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: When administered for therapeutic use, pre-existing asthma, chronic nasal disorders (e.g. allergy, rhinitis, nasal polyps and sinusitis), cardiovascular and peripheral vascular diseases, renal or hepatic impairment, hyperthyroidism, pheochromocytoma or insulin-dependent diabetes, and peptic ulcer disease may be aggravated by exposure.

IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED: Treat symptoms and eliminate exposure. If emesis has not occurred, it should be induced in conscious patients with a suitable emetic followed by an appropriate dose of activated charcoal. In unconscious patients with a secure airway, instill activated charcoal via a nasogastric tube. A saline cathartic or sorbitol may be added to the first dose of activated charcoal. Other supportive measures include diazepam or barbiturates for seizures, atropine for excessive bronchial secretions or diarrhea, respiratory support for respiratory failure, and vigorous fluid support for hypotension and cardiovascular collapse.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not established.

AUTOIGNITION TEMPERATURE: Not available.

FLAMMABLE LIMITS & METHOD OF DETERMINATION (in air by volume, %): Not available.

FIRE EXTINGUISHING MEDIA: Use extinguishing media appropriate for surrounding fire.

UNSUITABLE EXTINGUISHING MEDIA: None known.

5. FIRE-FIGHTING MEASURES (Continued)

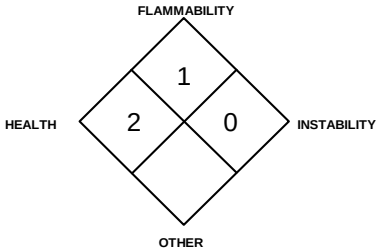
SPECIAL HAZARDS ARISING FROM THE PRODUCT: This product may be combustible. When involved in a fire, the product may decompose and produce irritating vapors and toxic compounds (including nitrogen and carbon oxides).

Explosion Sensitivity to Mechanical Impact: Not applicable.

Explosion Sensitivity to Static Discharge: Not applicable.

SPECIAL PROTECTIVE ACTIONS FOR FIRE-FIGHTERS: Incipient fire responders should wear eye protection. Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment. If protective equipment is contaminated by this compound, it should be thoroughly washed with running water prior to removal of SCBA respiratory protection. Firefighters whose protective equipment becomes contaminated should thoroughly shower with warm, soapy water and should receive medical evaluation if they experience any adverse effects.

NFPA RATING



Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate **3** = Serious **4** = Severe

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS: In the event of a spill, clear the area and protect people.

PROTECTIVE EQUIPMENT:

Small Spills: For incidental spills (e.g., 1 pkg. of gum), wear double latex or nitrile disposable gloves and eye protection.

Large Spills: For large spills (e.g., a pallet of product), protective apparel should be used with a respirator when there is any danger of airborne dusts being generated. Minimum Personal Protective Equipment should be rubber gloves, rubber boots, face shield, and Tyvek suit.

METHODS FOR CLEANUP AND CONTAINMENT:

Small Spills: Pick-up or sweep-up spilled product.

Large Spills: Trained personnel following pre-planned procedures should handle non-incidental releases. Access to the spill areas should be restricted. Sweep up spilled product carefully, avoiding the generation of airborne dusts.

All Spills: Decontaminate the area of the spill thoroughly using detergent and water. Place all spill residue in an appropriate container and seal. Do not mix with wastes from other materials. If necessary, discard contaminated response equipment or rinse with soapy water before returning such equipment to service. Dispose of in accordance with applicable international, national, state, and local procedures (see Section 13, Disposal Considerations).

ENVIRONMENTAL PRECAUTIONS: Prevent material from entering sewer or confined spaces, waterways, soil or public waters. Do not flush to sewer. For spills on water, contain, minimize dispersion and collect.

7. HANDLING and USE

PRECAUTIONS FOR SAFE HANDLING: Employees must be trained to properly use this product. As with all chemicals, avoid getting this material ON YOU or IN YOU. Do not eat, drink, smoke, or apply cosmetics in work areas where this product is handled or stored. Do not handle broken packages unless wearing appropriate personal protective equipment. Wash away any material which may have contacted the body with copious amounts of water or soap and water. Eyewash fountains should be provided in areas where there is any possibility that workers could be exposed to the product; this is irrespective of the recommendation involving the wearing of eye protection. Wash thoroughly after handling this product or equipment and containers of this product. Follow SPECIFIC USE INSTRUCTIONS supplied with this product. Use of this product should be performed in a designated area for working with drugs. Particular care in working with this product must be practiced in pharmacies and other preparation areas, during manufacture of this compound, and during patient administration. If necessary, work areas must be regularly cleaned and decontaminated.

Clean work clothes should be supplied daily and the workers should shower prior to changing to street clothes. Workers whose clothing may have become contaminated should change into uncontaminated clothing before leaving the work premises. Contaminated protective clothing should be segregated in such a manner so that there is no direct personal contact by personnel who handle, dispose, or clean the clothing. Quality assurance to ascertain the completeness of the cleaning procedures should be implemented before the decontaminated protective clothing is returned for reuse by the workers. All contaminated clothing should not be taken home at end of shift, but should remain at employee's place of work for cleaning.

PRODUCT PREPARATION INSTRUCTIONS FOR MEDICAL PERSONNEL: Handle this product following standard medical practices and following the recommendations presented on the Package Insert.

CONDITIONS FOR SAFE STORAGE: Containers of this product must be properly labeled. Store this product in original container. Store at controlled room temperature, 15-30°C (59-86°F). Protect from light and moisture. Inspect bottles containing this product for leaks or damage. Store away from incompatible materials (see Section 10, Stability and Reactivity).

SPECIFIC END USE(S): This product human pharmaceutical. Follow all industry standards for use of this product.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

EXPOSURE LIMITS/CONTROL PARAMETERS:

VENTILATION AND ENGINEERING CONTROLS: Use with adequate ventilation. Follow standard medical product handling procedures. During decontamination of work surfaces, workers should wear the same equipment recommended in Section 6 (Accidental Release Measures) of this SDS.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION (Continued)

EXPOSURE LIMITS/CONTROL PARAMETERS (continued):

OCCUPATIONAL/WORKPLACE EXPOSURE LIMITS/GUIDELINES:

CHEMICAL NAME	CAS #	EXPOSURE LIMITS IN AIR							
		ACGIH-TLVs		OSHA-PELs		NIOSH-RELs		NIOSH	OTHER
		TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	TWA mg/m^3	STEL mg/m^3	IDLH mg/m^3	mg/m^3
Nicotine Polacrilex Exposure limits are given for nicotine	96055-45-7	0.5 (skin)	NE	0.5 (skin)	NE	0.5 (skin)	NE	5	DFG MAK: Skin Actavis WEL: 200 µg/m^3
Dreycol Gum Base (Arabic Gum)	9000-01-5	NE	NE	NE	NE	NE	NE	NE	NE
Polacrilin Potassium	50602-21-6	NE	NE	NE	NE	NE	NE	NE	NE
Sodium Carbonate	497-19-8	NE	NE	NE	NE	NE	NE	NE	NE
Sorbitol	50-70-4	NE	NE	NE	NE	NE	NE	NE	NE

NE = Not Established.

INTERNATIONAL OCCUPATIONAL EXPOSURE LIMITS: Currently there are no exposure limits are in force for the active component. The following limits are for Nicotine freebase. Exposure limits are added or change; individual country authorities should be contacted to check on more current limits. The following limits are for freebase Nicotine.

ARAB Republic of Egypt: TWA = 0.5 mg/m^3, Skin, JAN 1993
Australia: TWA = 0.5 mg/m^3, JUL 2008
Austria: MAK-TMW = 0.07 ppm (0.5 mg/m^3); KZW = 0.28 ppm (2 mg/m^3), skin, 2007
Belgium: TWA = 0.5 mg/m^3, Skin, MAR 2002
Denmark: TWA = 0.5 mg/m^3, OCT 2002
EC: TWA = 0.5 mg/m^3, FEB 2006
Finland: TWA 0.5 mg/m^3, STEL = 1.5 mg/m^3, SEP 2009
France: VME = 0.5 mg/m^3, Skin, FEB 2006
Hungary: TWA = 0.5 mg/m^3, STEL = 2 mg/m^3, Skin, SEP 2000
Korea: TWA = 0.5 mg/m^3, skin, 2006
Mexico: TWA = 0.5 mg/m^3; STEL = 1.5 mg/m^3 (skin), 2004
The Netherlands: MAC-TGG = 0.5 mg/m^3, Skin, 2003
New Zealand: TWA = 0.5 mg/m^3, skin, JAN 2002
Norway: TWA = 0.5 mg/m^3, JAN 1999
Peru: TWA = 0,5 mg/m^3, JUL 2005
The Philippines: TWA = 0.5 mg/m^3, Skin, JAN 1993
Poland: MAC(TWA) = 0.5 mg/m^3, MAC(STEL) = 1.5 mg/m^3, JAN 1999
Sweden: TWA = 0.5 mg/m^3, JUN 2005
Switzerland: MAK-W = 0.07 ppm (0.5 mg/m^3), KZG-W = 0.14 ppm (1 mg/m^3), Skin, DEC 2006
Thailand: TWA = 0.5 mg/m^3, JAN 1993
Turkey: TWA = 0.5 mg/m^3, Skin, JAN 1993
United Kingdom: TWA = 0.5 mg/m^3; STEL = 1.5 mg/m^3, skin, OCT 2007
In Argentina, Bulgaria, Colombia, Jordan, Singapore, Vietnam check ACGIH TLV

PERSONAL PROTECTIVE EQUIPMENT: Use of personal protective equipment must be in compliance with U.S. OSHA 29 CFR Subpart I (beginning at 1910.132), Canadian CSA Standards Z94.4-02 and Z94.3-02, EU EN 529:2005, CEN/TR 15419:2006, and CR 13464:1999. Please reference applicable regulations and standards for relevant details.

RESPIRATORY PROTECTION: A respirator is not required for routine conditions of use with adequate engineering controls. A full-face Air-Purifying Respirator with high-efficiency organic mist filter or a Supplied-Air Respirator must be worn during operations where engineering controls are not sufficient, large spill cleanup, or when processing generates airborne mists or sprays. If respiratory protection is needed, use only respiratory protection authorized under appropriate regional regulations. The following NIOSH respiratory protection equipment guidelines for freebase Nicotine are given to assist in selection of respiratory protective equipment.

NICOTINE

CONCENTRATION	RESPIRATORY PROTECTION
Up to 5 mg/m^3:	Any Supplied-Air Respirator (SAR), or any self-Contained Breathing Apparatus (SCBA) with a full facepiece.
Emergency or Planned Entry into Unknown Concentrations or IDLH Conditions:	Any SCBA that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode, or any SAR that has a full facepiece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive-pressure mode.
Escape:	Any Air-Purifying, Full-Facepiece Respirator (gas mask) with a chin-style, front- or back-mounted organic vapor canister, or any appropriate escape-type, SCBA.

EYE PROTECTION: During operations in which aerosols of the compound may be generated, splash goggles or safety glasses with side-shields should be considered.

HAND PROTECTION: During manufacture or other similar industrial operations, wear the appropriate hand protection for the process. Use double gloves for spill response, as stated in Section 6 (Accidental Release Measures) of this SDS.

BODY PROTECTION: Use appropriate protective clothing for the task (e.g., lab coat, etc.)

9. PHYSICAL and CHEMICAL PROPERTIES

FORM: Square gum.
COLOR: Off-white.
MOLECULAR WEIGHT: For Nicotine: 162.24
MOLECULAR FORMULA: For Nicotine: $C_{10}H_{14}N_2$
ODOR: Odorless.
ODOR THRESHOLD: Not available.
BOILING POINT @ 760 mmHg: Not available.
MELTING POINT: Not available.
EVAPORATION RATE (nBuAc = 1): Not available.
pH: Not available.
FLASH POINT: Not available.
AUTOIGNITION TEMPERATURE: Not available.
VAPOR PRESSURE (air = 1) @ 25°C: Not available.
SPECIFIC GRAVITY (water = 1): Not available.
SOLUBILITY IN WATER: Expected to be insoluble
OTHER SOLUBILITIES: Not available.
COEFFICIENT WATER/OIL DISTRIBUTION: For Nicotine: Log P(oct) = 1.2
HOW TO DETECT THIS SUBSTANCE (identification properties): The appearance of this product is a distinguishing characteristic.

10. STABILITY and REACTIVITY

CHEMICAL STABILITY: This product is not reactive.
DECOMPOSITION PRODUCTS: *Combustion:* If exposed to extremely high temperatures, the products of thermal decomposition may include irritating fumes and toxic gases (e.g., carbon and nitrogen oxides). *Hydrolysis:* None known.

10. STABILITY and REACTIVITY (Continued)

MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Oxidizers, strong acids. \
POSSIBILITY HAZARDOUS REACTIONS/POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Avoid heat, light, and contact with incompatible chemicals.

11. TOXICOLOGICAL INFORMATION

SYMPTOMS OF OVEREXPOSURE BY ROUTE OF EXPOSURE: The health hazard information provided below is pertinent to medical employees using this compound in an occupational setting. The following paragraphs describe the symptoms of exposure by route of exposure.

INHALATION: Inhalation is not a likely route of exposure

EYE CONTACT: Eye contact is not a likely route of exposure.

SKIN CONTACT: Under most circumstances, skin contact is not expected to cause harmful effect. Prolonged skin contact may result in absorption of nicotine through the skin and systemic toxicity. In this event, contact may lead to the formation of methemoglobin in the blood, causing cyanosis, a condition preventing adequate oxygenation of the blood.

SKIN ABSORPTION: Nicotine can be absorbed via intact skin and cause systemic Nicotine toxicity.

INGESTION: Ingestion is not a significant route of occupational overexposure. The oral LD_{50} for Nicotine is > 5 mg/kg in dogs and > 24 mg/kg in rodents. Death is due to respiratory paralysis. The oral minimum acute lethal dose for nicotine in adult humans is reported to be 40 to 60 mg (< 1 mg/kg). Ingestion causes burning of mouth and stomach, vomiting, excitement, faintness, paralysis of lungs. Other symptoms of prolonged or repeated ingestion, as may occur when poor industrial hygiene is practiced, may include those described for "Other Potential Health Effects".

INJECTION: Not a likely route of exposure.

OTHER POTENTIAL HEALTH EFFECTS-Acute Nicotine Toxicity: Symptoms of acute Nicotine toxicity include pallor, cold sweat, nausea, salivation, vomiting, abdominal pain, diarrhea, headache, dizziness, disturbed hearing and vision, tremor, mental confusion, and weakness. Prostration, hypotension, and respiratory failure may ensue with large overdoses. Lethal doses produce convulsions quickly and death follows as a result of peripheral or central respiratory paralysis or, less frequently, cardiac failure.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	2*
FLAMMABILITY HAZARD	(RED)	1
PHYSICAL HAZARD	(YELLOW)	0

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: **0** = Minimal **1** = Slight **2** = Moderate **3** = Serious **4** = Severe * = Chronic hazard

In therapeutic use nicotine compounds have caused adverse effects to the following body systems.

- ***Cardiovascular:*** Cardiovascular effects have included increases in heart rate and blood pressure. New ventricular and supraventricular tachycardia, increase in PVC frequency, less supra-ventricular arrhythmia, less arrhythmia and lower heart rate, new ST segment depression. Myocardial infarction has been rarely associated with the use of nicotine patches; underlying coronary artery disease may contribute to this effect. Very rarely intracerebral hematoma has also been reported. In patients with coronary artery disease or ischemic heart disease, nicotine may cause coronary artery vasoconstriction.
- ***Respiratory:*** Respiratory side effects have included bronchospasm in patients with preexisting asthma. Sore throat has also been reported rarely.
- ***Dermatologic*:** Dermatologic side effects have included itching and local erythema, and contact dermatitis when nicotine is used topically has been reported. Nicotine gum has been associated with increased sweating.
- ***Gastrointestinal:*** Gastrointestinal side effects have included nausea, dry mouth, dyspepsia, and diarrhea, hiccups, flatulence, increased salivation, stomatitis, tooth disorder, glossitis, heartburn, and unpleasant taste.
- ***Nervous System:*** Nervous system side effects, including lightheadedness, headache, sleep disturbances, abnormal dreams, irritability, dizziness, and tremor. Stroke due to severe cerebral artery vasospasm has been reported with patient history of subarachnoid hemorrhage shortly after topical application of nicotine.
- ***Musculoskeletal:*** Musculoskeletal side effects have rarely included arthralgias and myalgias and jaw pain has been associated with the use of nicotine gum.
- ***Hematologic:*** Hematologic side effects have included increases in platelet aggregation and enhanced thrombus formation.
- ***Local:*** Local side effects including coughing and rhinitis have been reported when nicotine is used by nasal and inhalation routes.
- ***Endocrine:*** Endocrine side effects have included hyperinsulinemia and insulin resistance during the long-term use of nicotine gum.
- ***Metabolic:*** Metabolic side effects including at least one case of hyponatremia and syndrome of inappropriate antidiuretic hormone (SIADH) have been reported. Rarely hyponatremia and syndrome of inappropriate antidiuretic hormone (SIADH) have been reported with topical application of nicotine. The patient presented complaining of a worsening cough that had progressed over the past month.
- ***Ocular:*** Ocular side effects including vision problems have been reported with the use of the nicotine gums.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Overexposure to this compound may cause the following health effects:

Acute: This product may be harmful by ingestion or prolonged skin contact. .

Chronic: Repeated exposure may cause dependence. In the event of chronic exposures to therapeutic doses of this compound, effects described in "Other Potential Health Effects" may result.

11. TOXICOLOGICAL INFORMATION (Continued)

TARGET ORGANS: ACUTE: Industrial Exposure: Skin. Therapeutic Doses: See information under 'Other Health Effects'. CHRONIC: Industrial Exposure: Skin. Therapeutic Doses: See information under 'Other Health Effects'.

IRRITANCY OF PRODUCT: This compound may cause irritation by inhalation, skin and by eye contact.

SENSITIZATION OF PRODUCT: No information is available on potential sensitization effects from this product.

TOXICITY DATA: No specific toxicological data are available for Nicotine Polacrilex. The estimated LD50 dermal toxicity is 1400 mg/kg and the estimated oral LD50 toxicity is 1050 mg/kg. The following are specific data for freebase Nicotine. Only human data, LD50 Oral-Rat or Mouse, LD50 Skin-Rat or Rabbit and presented in this SDS. Contact Watson for more information.

TDLo (Oral-Human) 0.057 mg/kg: Behavioral: changes in psychophysiological tests
TDLo (Oral-Human) 85.7 µg/kg: Brain and Coverings: changes in surface EEG
TDLo (Oral-Human) 0.03 mg/kg: Behavioral: changes in motor activity (specific assay); Behavioral: changes in psychophysiological tests
TDLo (Oral-Man) 0.029 mg/kg: Behavioral: changes in psychophysiological tests
TDLo (Oral-Man) 0.027 mg/kg: Vascular: structural changes in vessels
TDLo (Oral-Human) 40 µg/kg: female 24 week(s) after conception: Reproductive: Specific Developmental Abnormalities: cardiovascular (circulatory) system
TDLo (Skin-Human) 2.8 mg/kg/4 weeks-intermittent: Skin and Appendages: dermatitis, allergic (after systemic exposure)
TDLo (Skin-Human) 3 mg/kg/4 weeks-intermittent: Behavioral: alteration of operant conditioning; Gastrointestinal: nausea or vomiting; Skin and Appendages: dermatitis, irritative (after systemic exposure)
TDLo (Skin-Human) 0.07 mg/kg: Behavioral: changes in psychophysiological tests
TDLo (Skin-Human) 0.42 mg/kg: Behavioral: muscle weakness
TDLo (Skin-Human) 4.2 mg/kg/14 days-continuous: Behavioral: changes in psychophysiological tests
TDLo (Skin-Man) 0.2 mg/kg: Behavioral: alteration of operant conditioning
TDLo (Skin-Man) 0.3 mg/kg: Behavioral: changes in psychophysiological tests; Cardiac: pulse rate increase, without fall in BP
TDLo (Skin-Woman) 0.28 mg/kg: Behavioral: alteration of operant conditioning
TDLo (Skin-Woman) 0.42 mg/kg: Behavioral: changes in psychophysiological tests; Cardiac: pulse rate increase, without fall in BP
TDLo (Skin-Child) 0.35 mg/kg: Behavioral: changes in psychophysiological tests
TDLo (Intravenous-Man) 21.4 µg/kg: Behavioral: changes in psychophysiological tests; Biochemical: Metabolism (Intermediary): glycolytic
TDLo (Intravenous-Man) 0.01 mg/kg: Behavioral: abuse, changes in psychophysiological tests: 0.014 mg/kg
TDLo (Rectal-Human) 1430 µg/kg: Behavioral: hallucinations, distorted perceptions; Gastrointestinal: nausea or vomiting
LDLo (Unreported-Man) 882 µg/kg
TCLo (Inhalation-Human) 0.014 mg/kg: Sense Organs and Special Senses (Eye): effect, not otherwise specified; Behavioral: changes in psychophysiological tests
TCLo (Inhalation-Human) Behavioral: changes in psychophysiological tests
TCLo (Inhalation-Woman) 0.02 mg/kg: Behavioral: changes in psychophysiological tests
TCLo (Inhalation-Man) 0.014 mg/kg: Behavioral: changes in psychophysiological tests
LD_{50} (Oral-Rat) 50 mg/kg
LD_{50} (Oral-Mouse) 3340 µg/kg: Behavioral: tremor, muscle contraction or spasticity; Lungs, Thorax, or Respiration: dyspnea
LD_{50} (Skin-Rat) 140 mg/kg
LD_{50} (Skin-Rabbit) 50 mg/kg: Behavioral: convulsions or effect on seizure threshold; Lungs, Thorax, or Respiration: respiratory depression
DNA Inhibition (Human Cells-Not Otherwise Specified) 4 mmol/L
DNA Damage (Human Cells-Not Otherwise Specified) 0.25 mmol/L/1 hour
Mutation Test Systems-Not Otherwise Specified (Human Cells-Not Otherwise Specified) 4 mmol/L
Cytogenetic Analysis (Human Mammary Gland) 200 µmol/L/24 hours

CARCINOGENIC POTENTIAL: Nicotine itself does not appear to be a carcinogen in laboratory animals. However, nicotine and its metabolites increased the incidences of tumors in the cheek pouches of hamsters and forestomach of F344 rats, respectively, when given in combination with tumor-initiators. One study, which could not be replicated, suggested that cotinine, the primary metabolite of nicotine, may cause lymphoreticular sarcoma in the large intestine of rats.

The components are not found on the following lists: U.S. EPA, U.S. NTP, U.S. OSHA, U.S. NIOSH, GERMAN MAK, IARC, or ACGIH, and therefore is not considered to be, nor suspected to be a cancer-causing agent by these agencies.

REPRODUCTIVE TOXICITY INFORMATION: When used in therapeutic formulations, Nicotine chewing gum is rated as Pregnancy Category C (animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks) and transdermal nicotine is considered Category D (There is positive evidence of human fetal risk based on adverse reaction data from investigational or marketing experience or studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks). Spontaneous abortion during nicotine replacement therapy has been reported; as with smoking, nicotine as a contributing factor cannot be excluded.

Mutagenicity: Neither Nicotine nor cotinine were mutagenic in the Ames salmonella test. Nicotine induced repairable DNA damage in an E. coli test system. Nicotine was shown to be genotoxic in a test system using Chinese hamster ovary cells. In rats and rabbits, implantation can be delayed or inhibited by a reduction in DNA synthesis that appears to be caused by nicotine. Studies have shown a decrease in litter size in rats treated with nicotine during gestation.

Embryotoxicity/Teratogenicity: Nicotine was shown to produce skeletal abnormalities in the offspring of mice when toxic doses were given to the dams (25 mg/kg IP or SC).

Reproductive Toxicity: Nicotine crosses the placenta and is freely distributed into milk, reportedly producing concentrations in breast milk averaging 2.9 times those in plasma. Nicotine concentrations in amniotic fluid, placental tissue, and fetal serum exceed corresponding maternal serum concentrations in women who smoke cigarettes, apparently as a result of ion trapping of alkaline nicotine in these acidic compartments. Small amounts of nicotine appear in serum and urine of infants of nursing women who smoke cigarettes.

ACGIH BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, ACGIH Biological Exposure Indices (BEIs) have not been determined for components of this product.

12. ECOLOGICAL INFORMATION

ALL WORK PRACTICES MUST BE AIMED AT ELIMINATING ENVIRONMENTAL CONTAMINATION.

MOBILITY: This product has not been tested for mobility in soil. It may be mobile in soil due to high solubility. The following information is available for the Nicotine component.

NICOTINE: The Koc of this compound is estimated as 100, using a log Kow of 1.17 and a regression-derived equation. According to a classification scheme, this estimated Koc value suggests that this material is expected to have high mobility in soil. The pKb1 of nicotine is 6.16, indicating that this compound will partially exist in the cation form in the environment and cations generally adsorb more strongly to soils containing organic carbon and clay than their neutral counterparts. Adsorption under more acidic condition, can be represented as a high-affinity type isotherm, indicating that nicotine has a high affinity for humic acids in soil as a result of protonation of the pyrrolidine nitrogen atom of this compound.

12. ECOLOGICAL INFORMATION (Continued)

PERSISTENCE AND BIODEGRADABILITY: No data are available on the persistence or biodegradability of this product. It is expected that some biodegradation will occur to this product; however, no specific information is known. The following information is available for Nicotine.

NICOTINE: If released to air, a vapor pressure of 0.0038 mm Hg at 25°C indicates this compound will exist solely as a vapor in the atmosphere. Vapor-phase material will be degraded in the atmosphere by reaction with photochemically-produced hydroxyl radicals; the half-life for this reaction in air is estimated to be 4 hours. This compound does not contain chromophores that absorb at wavelengths > 290 nm and therefore is not expected to be susceptible to direct photolysis by sunlight. If released to soil, this compound is expected to have high mobility based upon an estimated Koc of 100. However, nicotine is a base and protonation under neutral and acidic conditions may result in greater adsorption and less mobility than its estimated Koc or water solubility indicate. Volatilization from moist soil surfaces is not expected to be an important fate process based upon an estimated Henry's Law constant of 3.0X10-9 atm-cu m/mole. This compound may volatilize from dry soil surfaces based upon its vapor pressure. This material was biodegraded very slowly by Arthrobacter globiformis, isolated from cigar tobacco leaves (var. Nambu) and soil of a tobacco field, to first 6-hydroxynicotine and then 6-hydroxy-N'-methylmyosine. Mixed culture data were not available. If released into water, nicotine is not expected to adsorb to suspended solids and sediment based upon the estimated Koc. Volatilization from water surfaces is not expected to be an important fate process based upon this compound's estimated Henry's Law constant. Hydrolysis is not expected to be an important environmental fate process since this compound lacks functional groups that hydrolyze under environmental conditions.

BIO-ACCUMULATION POTENTIAL: No data are available on bio-accumulation potential of this material. The following information is available for the Nicotine component.

NICOTINE: An estimated BCF of 3 was calculated in fish, using a log Kow of 1.17 and a regression-derived equation. According to a classification scheme, this BCF suggests the potential for bioconcentration in aquatic organisms is low.

ECOTOXICITY: All releases to terrestrial, atmospheric and aquatic environments should be avoided. No specific data are available for the product. The following toxicity data are available for freebase Nicotine.

EC_{50} (*Xenopus laevis* African clawed frog, developing mid to late blastula) 96 hours = 400 µg/L, freshwater, renewal, 23-24°C, without the metabolic activation system Effect: development, general /100% purity

EC_{50} (*Xenopus laevis* African clawed frog, developing mid to late blastula) 96 hours = 5800 µg/L: freshwater, renewal, 23-24°C, frog larvae injected with chorionic gonadotropin to induce ovulation and amplexus; Effect: development, general /100% purity

EC_{50} (*Daphnia magna* Water flea, age < 24 hr neonate) 24 hours = 0.035 mmol/L; Conditions: freshwater, static, 21°C, pH 7.6; Effect: intoxication, immobilization

EC_{50} (*Daphnia pulex* Water flea, age < 24 hr) 24 hours = 0.00857 mM; Conditions: freshwater, static, 20°C; Effect: intoxication, immobilization

EC_{50} (*Daphnia pulex* Water flea, age <24 hr neonate) 48 hours = 242 µg/L; Conditions: freshwater, static, 20°C, pH 7.6-8.0, hardness 160-180 mg/L CaCO3, alkalinity 110-120 mg/L CaCO3, dissolved oxygen 60-100 mg/L; Effect: intoxication, immobilization /> or =97% purity

LC_{50} (*Eisenia fetida* earthworm, mature 370-450 mg) 48 hours, direct application using filter paper 1-10 µg/sq cm

LC_{50} (*Xenopus laevis* African clawed frog, developing mid to late blastula) 96 hours = 136,000 µg/L; Conditions: freshwater, renewal, 23-24°C, without metabolic activation system; 100% purity

LC_{50} (*Xenopus laevis* African clawed frog, developing mid to late blastula) 96 hours = 20,000 µg/L; Conditions: freshwater, renewal, 23-24°C, frog larvae injected with chorionic gonadotropin to induce ovulation and amplexus; 100% purity

LC_{50} (*Oncorhynchus mykiss* Rainbow trout, age 13-21 days fry) 96 hours = 4000 µg/L; Conditions: freshwater, static, 12°C; > or =95% purity

LC_{50} (*Oncorhynchus mykiss* Rainbow trout, new, newly or recent hatch) 60 days = 5000 µg/L; Conditions: freshwater, flow through, 10-11°C, pH 8.2, hardness 140 mg/L CaCO3, conductivity 260 µmhos/cm, dissolved oxygen 90% (70-100%); >98% purity

LC_{50} (*Culex pipiens molestus* Mosquito, 4 instar larvae) 24 hours = 0.000938 M; Conditions: freshwater, static, 18-20°C /100% purity

LC_{50} (*Dugesia dorotocephala Turbellarian*, flatworm, asexual, 15-18 mm) 10 days = 50,000-75,000 µg/L; Conditions: freshwater, renewal

OTHER ADVERSE EFFECTS: This compound has no known ozone depletion potential.

RESULTS OF PBT AND vPvB ASSESSMENT: No Data Available. PBT and vPvB assessments are part of the chemical safety report required for some substances in European Union Regulation (EC) 1907/2006, Article 14.

ENVIRONMENTAL EXPOSURE CONTROLS: Controls should be engineered to prevent release to the environment, including procedures to prevent spills, atmospheric release and release to waterways.

13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT/DISPOSAL METHODS: Based on potential toxic properties of this material, this product should be disposed of in toxic waste disposal sealable plastic or wire tie bags of 4-mil thick polyethylene or 2-mil polypropylene, labeled with a toxic hazard label and colored differently from other hospital trash bags that are used for the routine accumulation and collection of used containers, syringes, discarded gloves, gowns, goggles and any other disposable material. All related wastes should be put into these bags, and nothing else. Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Waste containers should be handled with uncontaminated gloves. Reusable equipment should be decontaminated using 0.05M Boric acid solution adjusted to pH 9 with 10 N sodium hydroxide followed by a detergent wash and then clean water rinse or by using a bleach solution (triple wash) and a detergent solution followed by clean water rinse.

PRECAUTIONS TO BE FOLLOWED DURING WASTE HANDLING: Wear proper protective equipment when handling waste materials.

U.S. EPA WASTE NUMBER: P075; As stipulated in 40 CFR 261.33, when nicotine and salts, as a commercial chemical product or manufacturing chemical intermediate or an off-specification commercial chemical product or a manufacturing chemical intermediate, becomes a waste, it must be managed according to federal and/or state hazardous waste regulations. Also defined as a hazardous waste is any container or inner liner used to hold this waste or any residue, contaminated soil, water, or other debris resulting from the cleanup of a spill, into water or on dry land, of this waste. Generators of small quantities of this waste may qualify for partial exclusion from hazardous waste regulations (40 CFR 261.5(e)).

EUROPEAN WASTE CODES: Wastes from natal care, diagnosis, treatment, or prevention of disease in humans: chemicals consisting of or containing dangerous substances, 18-01-06.

14. TRANSPORTATION INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS: This product is not classified as dangerous goods, per U.S. DOT regulations, under 49 CFR 172.101 when shipped under small quantity shipments. In this event, transport in sealed plastic bags inside robust UN approved sealed containers accompanied by a TREM card. UN No 1655. Keep away from food stuffs, acids alkalis and oxidizing agents.

14. TRANSPORTATION INFORMATION (Continued)

U.S. DEPARTMENT OF TRANSPORTATION REGULATIONS (continued): Shipments not meeting requirements of the small quantity exception must be shipped as follows:

UN IDENTIFICATION NUMBER:	UN 1655
PROPER SHIPPING NAME	Nicotine preparations, solid, n.o.s. (nicotine)
PACKING GROUP:	III
DOT LABEL(S) REQUIRED:	Class 6.1 (Toxic)

NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER, 2008: 151

MARINE POLLUTANT: Nicotine meets the criteria of a marine pollutant, per Appendix B to 49 CFR 172.101.

Note: The small quantity exception of 30 g (49 CFR 173.4), the exception for Class 6.1 materials of 2.85 kg (49 CFR 173.13), and the limited quantity exception for division 6.1 of 5 kg (49 CFR 173.153) may be applicable to shipments of this compound. The passenger aircraft/rail quantity limitation is 100 kg and the cargo aircraft only quantity limitation is 200 kg.

TRANSPORT CANADA, TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This compound is not classified as Dangerous Goods, per regulations of Transport Canada, when shipped under small quantity exceptions. Shipments not meeting requirements of the small quantity exception must be shipped as follows:

UN IDENTIFICATION NUMBER:	UN 1655
PROPER SHIPPING NAME:	Nicotine preparations, solid, n.o.s. (nicotine)
HAZARD CLASS NUMBER and DESCRIPTION:	6.1 (Toxic)
HAZARD LABEL (S) REQUIRED:	Class 6.1 (Toxic)
PACKING GROUP:	III
SPECIAL PROVISIONS:	None
EXPLOSIVE LIMIT & LIMITED QUANTITY INDEX:	5
ERAP INDEX:	None
PASSENGER CARRYING SHIP INDEX:	None
PASSENGER CARRYING ROAD OR RAIL VEHICLE INDEX:	100

INTERNATIONAL AIR TRANSPORT ASSOCIATION (IATA): This compound is not classified as Dangerous Goods, per rules of IATA when shipped under small quantity exceptions. Shipments not meeting requirements of the small quantity exception must be shipped as follows:

UN IDENTIFICATION NUMBER:	UN 1655
PROPER SHIPPING NAME:	Nicotine preparations, solid, n.o.s. (nicotine)
HAZARD CLASS NUMBER and DESCRIPTION:	6.1 (Toxic)
PACKING GROUP:	III
HAZARD LABEL(S) REQUIRED:	Class 6.1(Toxic)
EXCEPTED QUANTITIES:	E1

PASSENGER & CARGO AIRCRAFT LIMITED QUANTITY PACKING INSTRUCTION: Y645

PASSENGER & CARGO AIRCRAFT LIMITED QUANTITY MAXIMUM NET QUANTITY/PKG: 10 kg

PASSENGER & CARGO AIRCRAFT PACKING INSTRUCTION: 670

PASSENGER & CARGO AIRCRAFT MAXIMUM NET QUANTITY/PKG: 100 kg

CARGO AIRCRAFT ONLY PACKING INSTRUCTION:	677
CARGO AIRCRAFT ONLY MAXIMUM NET QUANTITY/PKG:	200 kg
SPECIAL PROVISIONS:	A3, A5, A6
ERG CODE:	6L

INTERNATIONAL MARITIME ORGANIZATION (IMO) DESIGNATION: This compound is not classified as Dangerous Goods by the International Maritime Organization when shipped under small quantity exceptions. Shipments not meeting requirements of the small quantity exception must be shipped as follows:

UN IDENTIFICATION NUMBER:	UN 1655
PROPER SHIPPING NAME:	Nicotine preparations, solid, n.o.s. (nicotine)
HAZARD CLASS NUMBER and DESCRIPTION:	6.1 (Toxic)
PACKING GROUP:	III
LABEL(s) REQUIRED:	Class 6.1 (Toxic)
SPECIAL PROVISIONS:	43, 223
LIMITED QUANTITIES:	5 kg
EXCEPTED QUANTITIES:	E1
PACKING:	Instructions: P002, Provisions: LP02
IBCs:	Instructions: IBC08; Provisions: B3
TANKS:	Instructions: T1; Provisions: TP33
EmS:	F-A, S-A
STOWAGE and SEGREGATION:	Category A.

MARINE POLLUTANT: Nicotine meets the criteria of a marine pollutant by the IMO.

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR): This compound is not classified as Dangerous Goods of the United Nations Economic Commission for Europe under small quantity exceptions.

14. TRANSPORTATION INFORMATION (Continued)

EUROPEAN AGREEMENT CONCERNING THE INTERNATIONAL CARRIAGE OF DANGEROUS GOODS BY ROAD (ADR) [continued]: Shipments not meeting requirements of the small quantity exception must be shipped as follows:

UN NUMBER:	UN 1655
NAME AND DESCRIPTION:	Nicotine preparations, solid, n.o.s. (nicotine)
CLASS:	6.1
CLASSIFICATION CODE:	T2
PACKING GROUP:	III
LABELS:	6.1
SPECIAL PROVISIONS:	43, 274
LIMITED QUANTITIES:	5 kg
EXCEPTED QUANTITIES:	E1
PACKING INSTRUCTION:	P002, IBC08, LP02, R001
SPECIAL PACKING PROVISIONS:	B3
MIXED PACKING INSTRUCTION:	MP10
PORTABLE TANKS and BULK CONTAINERS:	Instructions: T1; Special Provisions: TP33
HAZARD IDENTIFICATION NUMBER:	66

TRANSPORT IN BULK ACCORDING TO THE IBC CODE: See the information under the individual jurisdiction listings for IBC information.

ENVIRONMENTAL HAZARDS: The Nicotine component meets the criteria of environmentally hazardous according to the criteria of the UN Model Regulations (as reflected in the IMDG Code, ADR, RID, and ADN); no component is specifically listed in Annex III under MARPOL 73/78.

15. REGULATORY INFORMATION

UNITED STATES REGULATIONS:

U.S. SARA REPORTING REQUIREMENTS: This active component, Nicotine is subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

CHEMICAL NAME	SARA 302 (40 CFR 355, Appendix A)	SARA 304 (40 CFR Table 302.4)	SARA 313 (40 CFR 372.65)
Nicotine	Yes	Yes	313c

U.S. SARA 302 EXTREMELY HAZARDOUS THRESHOLD PLANNING QUANTITY TPQ: Nicotine: 100 lb (45 kg)

U.S. SARA 304 EXTREMELY HAZARDOUS REPORTABLE QUANTITY RQ: Nicotine: 100 lb (45 kg)

U.S. CERCLA REPORTABLE QUANTITIES (RQ): Nicotine: 100 lb (45 kg)

U.S. TSCA INVENTORY STATUS: Components of this product are on the TSCA Inventory or are excepted as polymers.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): The Nicotine component is on the California Proposition 65 lists. WARNING! This product contains a chemical known to the State of California to cause developmental harm.

OTHER U.S. FEDERAL REGULATIONS: Regulations under the FDA are applicable in medicinal formulations.

CANADIAN REGULATIONS:

CANADIAN DSL INVENTORY STATUS: Components of this product are on the DSL Inventory or are excepted as polymers.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: This compound is not on the CEPA Priorities Substances Lists.

CANADIAN WHMIS CLASSIFICATION AND SYMBOL: The WHMIS Requirements of the Hazardous Products Act does not apply in respect of the advertising, sale or importation of any cosmetic, device, drug or food within the meaning of the Food and Drugs Act.

EUROPEAN REGULATIONS:

SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE PRODUCT: When formulated in a finished medicinal compound for human use, this material is subject to Directive 2001/83/EC and subsequent amendments to the directive.

CHEMICAL SAFETY ASSESSMENT: No Data Available. The chemical safety assessment is required for some substances according to European Union Regulation (EC) 1907/2006, Article 14.

16. OTHER INFORMATION

ANSI LABELING (Based on 129.1, Provided to Summarize Occupational Exposure Hazards): WARNING! MAY BE HARMFUL BY INGESTION AND SKIN CONTACT. MAY BE FATAL IF INGESTED. MAY BE HARMFUL BY INHALATION. AY CAUSE ALLERGIC REACTION. MAY CAUSE CYANOSIS AND ADVERSE EFFECTS ON CENTRAL NERVOUS SYSTEM, CARDIOVASCULAR SYSTEM, GASTROINTESTINAL SYSTEM, BLOOD EFFECTS. Keep away from heat, sparks, and flame. Do not use therapeutically without prescription. Do not swallow. Avoid unnecessary contact with skin, eyes, and clothing. Wash thoroughly after handling. Wear gloves, goggles, and appropriate body protection during handling or administration. Keep away from heat, sparks, and flame. Avoid breathing airborne aerosols. Keep container tightly closed. Use only with adequate ventilation. Wash thoroughly after handling. Wear gloves, goggles, and appropriate body protection during handling or administration.

16. OTHER INFORMATION (Continued)

ANSI LABELING (continued)): FIRST-AID: In case of contact, flush skin or eyes with plenty of water. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. If swallowed, do NOT induce vomiting. If vomiting occurs, have person lean forward. Call physician or poison control center immediately. Never give anything by mouth to an unconscious person. IN CASE OF FIRE: Use water fog, dry chemical, CO_2, or "alcohol" foam. IN CASE OF SPILL: Sweep or vacuum spilled product avoiding contact and generation of dusts. Place residue in appropriate container and seal. Dispose of according to applicable regulations. Consult Safety Data Sheet for additional information.

GLOBAL HARMONIZATION AND EU CLP REGULATION (EC) 1272/2008 LABELING AND CLASSIFICATION: According to Article 1, item 5 (a) of CLP Regulation (EC) 1272/2008, medicinal products in the finished state for human use, as defined in 2001/83/EC, are excepted from classification and other criteria of 1272/2008.

EU 67/548/EEC LABELING AND CLASSIFICATION: According to Article 1 of European Union Council Directive 92/32/EEC, medical products in the finished state for human use (as defined by European Union Council Directives 67/548/EEC and 87/21/EEC) are not subject to the regulations and administrative provisions of European Union Council Directive 92/32/EEC.

CLASSIFICATION OF COMPONENTS:

CLP Regulation (EC) 1272/2008

Nicotine Polacrilex: Self-Classification

Classification: Acute Oral Toxicity Category 3, Acute Dermal Toxicity Category 3, Aquatic Chronic Toxicity Cat. 2

Hazard Statements: H301 + H311: Toxic if swallowed or in contact with skin.H411: Toxic to aquatic life with long-lasting effects.

Nicotine: Published Classification

Classification: Acute Dermal Toxicity Cat, 1, Acute Oral Toxicity Category 3, Aquatic Chronic Toxicity Cat. 2

Hazard Statements: H310: Fatal in contact with skin. H301: Toxic if swallowed. H411: Toxic to aquatic life with long-lasting effects.

Sodium Carbonate: Self-Classification

Classification: Acute Oral Toxicity Category 5, Acute Inhalation Toxicity Category 4

Hazard Statements: H303: May be harmful if swallowed. H332: Harmful if inhaled.

All Other Components: An official classification for these substances has not been published in the CLP 1272: 2008 and a self-classification is not applicable.

67/548/EEC:

Nicotine Polacrilex: Self-Classification

Classification: Toxic, Dangerous for the Environment

Risk Phrases: R24: Toxic in contact with skin. R25: Toxic if swallowed. R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Nicotine: Published Classification

Classification: Very Toxic, Dangerous for the Environment

Risk Phrases: R27: Very toxic in contact with skin. R25: Toxic if swallowed. R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Sodium Carbonate: Self-Classification

Classification: Harmful

Risk Phrases: R20: Harmful by inhalation.

All Other Components: An official classification for these substances has not been published in Commission Directives and a self-classification is not applicable.

REFERENCES AND DATA SOURCES: Contact the supplier for information.

METHODS OF EVALUATING INFORMATION FOR THE PURPOSE OF CLASSIFICATION: A calculation of the toxicity of the product was used to classify this compound.

REVISION HISTORY: May 2012: Up-date of entire SDS for compliance with CLP 1272: 2008.

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