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MATERIAL SAFETY DATA SHEET

SECTION 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Material Name .....: ROMAZICON(TM) Injection (3 ml vials)
Inventory Code .....: 75026
TSCA Status .....: FDA Exemption - Not on Inventory.
Therapeutic Category: Benzodiazepine receptor antagonist

SECTION 2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient Name	CAS Number	Concentration %
Flumazenil	78755-81-4	0.0100

SECTION 3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW
Physical State .....: Liquid.
Color .....: Colorless (clear)

POTENTIAL HEALTH EFFECTS
Relevant Routes of
Exposure .....: Skin Contact, Eye Contact, Ingestion.
Target Organs .....: Cardiovascular System, Central Nervous System.

Acute Effects
General .....: May cause central nervous system effects such as headache, dizziness, drowsiness, fatigue, and lack of muscular coordination. May cause cardiovascular effects such as increase or decrease in blood pressure, irregular heartbeat, chest pain, and cardiac arrest. May cause vasodilation. Signs and symptoms include flushing of the face, sensation of heat, headache, itching and gastrointestinal distress.

Chronic Effects ....: No adverse effects known.

Carcinogenicity ....: Not listed by NTP, IARC, or OSHA.

Reproductive
Toxicity .....: Flumazenil
Since this material may affect the developing fetus, females planning to have a child and pregnant women should exercise caution regarding exposure. It is also advisable for nursing mothers to exercise caution regarding exposure.

SECTION 3. HAZARDS IDENTIFICATION (Continued. . .)

Conditions
Aggravated .....: Hypersensitivity to this material and other materials in its chemical class.

SECTION 4. FIRST AID MEASURES

Inhalation .....: Remove to fresh air. If discomfort occurs or persists, get medical attention.
Skin Contact .....: Remove contaminated clothing and shoes. Wash skin with soap and plenty of water. If irritation occurs or persists, get medical attention. Wash clothing and shoes before reuse.
Eye Contact .....: Immediately flush eyes with plenty of water. If irritation occurs or persists, get medical attention.
Ingestion .....: If large quantities of this material are swallowed, get medical attention immediately. Do not induce vomiting unless directed by medical personnel. Never give anything by mouth to an unconscious person.

SECTION 5. FIRE FIGHTING MEASURES

Flash Point .....: Not Applicable
Extinguishing Media : Water, Carbon Dioxide, Dry Chemical, Foam.
Unusual Fire and
Explosion Hazards ..: Toxic emissions may be given off in a fire. See Decomposition Products in Section 10. Stability and Reactivity.
Fire Fighting
Instructions .....: Wear NIOSH/MSHA approved positive pressure, self contained breathing apparatus and full protective turn out gear. Use caution in approaching fire. Use water to keep fire exposed containers cool.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Spill Clean Up
Procedures .....: Use proper personal protective equipment and clothing specified in Section 8-Exposure Controls/Personal Protection. Shut off the source of the spill or leak if it is safe to do so. Absorb small spills with absorbent material. Dike large spills and pump into metal drums or absorb with absorbent material. Put saturated absorbent material into a suitable labeled open head drum. Secure the drum cover and move the container to a safe holding area. Clean spill area thoroughly.
Treatment and
Disposal .....: Decontaminate equipment. Dispose of protective clothing with the spilled material. Dispose of in accordance with recommendations in Section 13 Disposal Considerations.

SECTION 6. ACCIDENTAL RELEASE MEASURES (Continued. . .)

Reporting
Requirements .....: The United States Environmental Protection Agency (USEPA) has not established a Reportable Quantity (RQ) for releases of this material. In New Jersey, report all releases which are likely to endanger the public health, harm the environment or cause a complaint to the NJDEPE Hotline (1-609-292-5560) and to local officials. State and local regulations vary and may impose additional reporting requirements.

SECTION 7. HANDLING AND STORAGE

Storage Temperature
(min/max) .....: 15 to 30 C
Shelf Life .....: 24 months
Handling & Storage
Precautions .....: Avoid contact with eyes, skin and clothing.
Avoid breathing vapor or mist.
Use with adequate ventilation.
When handling, use proper personal protective equipment specified in section 8.
Wash thoroughly after handling.
Keep container tightly closed when not in use.
Store in a dry area at room temperature.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS
Ventilation .....: General room ventilation is adequate unless the process generates mist or vapor.

PERSONAL PROTECTION
Respirator Type(s) .: None Recommended.
Conditions for Use .: Under normal conditions of use, respiratory protection is not expected to be necessary. OSHA considers effective engineering controls to be the primary means to control worker exposure. Respiratory protection should not substitute for feasible engineering controls. Whenever respiratory protection is used, a complete respirator program should be developed in accordance with OSHA Subpart I (29CFR1910.134) requirements.
Glove Materials ....: Any plastic or rubber glove.
Conditions for Use .: Gloves are required if there is a potential for skin contact.
Skin Protection ....: None required under normal and foreseeable conditions of use. Consult the protective clothing manufacturer, supplier and/or industrial hygienist.
Eye Protection .....: Safety Glasses Required, Safety Goggles Recommended.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION (Continued. . .)

OTHER CONTROL MEASURES
Additional
Protective Measures : Work clothing should be removed in a changeroom on site and laundered professionally. Employees should shower and change into street clothes before leaving the facility. Provide safety showers and eyewash stations in the work area.

EXPOSURE LIMITS
Flumazenil
Roche IOEL: 0.100 mg/m3 8 Hr. Time Weighted Average.
Roche IOEL: 0.200 mg/m3 Short Term Exposure Limit.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State .....: Liquid.
Color .....: Colorless (clear)
Pure/Mixture .....: Mixture.
pH .....: 3.4-4.6

SECTION 10. STABILITY AND REACTIVITY

Stability .....: Normally stable even under fire exposure conditions and not water reactive
Conditions to Avoid : None Known
Incompatibility -
Materials to Avoid .: Unknown.
Decomposition
Products .....: Carbon monoxide, carbon dioxide, hydrogen fluoride, oxides of nitrogen
Polymerization .....: No
Conditions of
Polymerization .....: Will not occur.

SECTION 11. TOXICOLOGICAL INFORMATION

ROMAZICON(TM) Injection (3 ml vials)
Acute Intravenous, Single Dose, Mouse: >2.5 mg/kg
Summary: Acute intravenous LD50 (mouse) is greater than 2.5 mg/kg body weight at 5 days, under the study conditions utilized.

Flumazenil
Acute Oral, Rat: 4200 mg/kg
Summary: Acute oral LD50 (rat) of 4200 mg/kg body weight classifies this material as slightly toxic orally under the study conditions utilized. Signs of toxicity include decrease motor activity, catatonia (schizophrenia), profuse salivation, and tremors.

SECTION 11. TOXICOLOGICAL INFORMATION (Continued. . .)

Chronic Oral, Dog
Summary: No significant treatment related changes in histopathological or anatomical parameters were noted in one-year feeding study in dogs at doses of 5, 25, and 125 mg/kg/day. The clinical signs were dose-related and include sedation, decreased motor activity, and lethargy; tremors were noted in dogs at the high dose groups and elevated serum glyceride levels in female dogs in the high dose groups were also observed under the the study condtions utilized.

Reproductive Oral, Rat
Summary: In a Segment I study, there was no evidence of any impairment of fertility and reproductive capabilities of male and female rats at oral doses of 15, 45, and 125 mg/kg/day under the study conditions utilized. In another study, pregnant female rats given oral doses of 5, 25, and 125 mg/kg/day from day 15 of gestation through day 22 of lactation showed slight increases in liver weights and delays in incisor eruption and ear opening in the pups in the high dose groups.

Teratogenicity Oral, Rat
Summary: No evidence of teratogenic effects in rats when this material was administered orally at doses of 15, 50, 150 mg/kg/day from day 6 through day 15 of gestation, under the study condtions utilized.

Teratogenicity Oral, Rabbit
Summary: No evidence of teratogenic effects in rabbits when this material was administered orally at doses of 15, 50, and 150 mg/kg/day from day 6 through day 19 of gestation, under the study conditions utilized.

Mutagenicity
Summary: No evidence of mutagenicity was observed in the following in vitro assays: Ames test, "treat and plate" assay, HGPRT assay, chromosomal aberrations in human lymphocytes assay under the study conditions utilized. A positive response in the unscheduled DNA synthesis assay is not considered to be toxicologically relevant since this occurred at concentrations that were cytotoxic under the study conditions utilized and since there are negative results in other assays that measure DNA repair.

Mutagenicity Mouse
Summary: No evidence of mutagenicity was observed in the following in vivo assays: mouse micronucleus assay and the DNA repair assay in male mouse germ cells under the study conditions utilized.

SECTION 12. ECOLOGICAL INFORMATION

Flumazenil
Environmental Concentration Lethal to 50%, 48 Hour, Daphnia: >518 mg/L
Summary: The EC50 is greater than 518 mg/l which classifies this material as practically non-toxic to Daphnia under the study conditions utilized. The No Observed Effect Concentration (NOEC) is 65.6 mg/l.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal
Recommendations ....: This material is suitable for incineration. These recommendations are based on the product as shipped. Use, processing, alteration or contamination may affect these disposal recommendations. State, local or site restrictions affecting the available proper disposal options may vary.
RCRA Waste # .....: Not regulated under RCRA
Empty Containers ...: Empty containers must be triple rinsed prior to disposal, recycling, or reuse.

SECTION 14. TRANSPORTATION INFORMATION

Enforcement Agency .: US Dept. of Transportation
Country/Community ..: USA
Proper Ship. Name ..: Non-regulated

Enforcement Agency .: International Air Transport Association
Country/Community ..: International
Proper Ship. Name ..: Non-regulated

SECTION 15. REGULATORY INFORMATION

Law/Regulation .....: Hazardous Chemical Reporting: Community Right-To-Know 40CFR370
Common Name .....: SARA Title III Section 312 - Hazardous Chemical Inventory
Enforcement Agency .: Environmental Protection Agency (EPA)
Governing Authority : USA
Criteria Met .....: Acute

SECTION 16. OTHER INFORMATION

Additional
Information .....: NFPA RATING: These ratings are based on NFPA Code 704 and are intended for use by emergency personnel to determine the immediate hazards of a material.
....Health 1
....Fire 0
....Reactivity 0

APPROVAL INFORMATION
Preparer .....: Annette Bucca-Janacek
Approver .....: Corporate Environmental & Safety Affairs
Approval Date .....: 12/08/99
Previous Approval
Date .....: 05/11/95
Reason For Issue ...: Revision - Addition of IOEL

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