



a member of the Roche Group

Material Safety Data Sheet

Material Name: Chromosome 12 DIG Probe

MSDS ID: VEN-172

*** Section 1 - Chemical Product and Company Identification***

Manufacturer Information

VENTANA MEDICAL SYSTEMS INC.
1910 E. Innovation Park Drive
Tucson, AZ 85755
Phone: (520) 887-2155

EMERGENCY TELEPHONE NUMBER:
(800) 424-9300 (USA/Canada)
CHEMTREC: +1 (703) 527-3887 (International)

Material Name: Chromosome 12 DIG Probe

Product Number(s)

760-1221, 980-1221, 06577059001, 06577296001

Product Use

Research use only

*** Section 2 - Hazards Identification***

NFPA Ratings: Health: 2 Fire: 1 Reactivity: 0

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

Preparation

Repr.Cat.2; R:61

Risks

May cause harm to the unborn child.

EMERGENCY OVERVIEW

Physical Form: liquid

Major Health Hazards: respiratory tract irritation, skin irritation, eye irritation, reproductive effects

POTENTIAL HEALTH EFFECTS

Inhalation

Short Term: irritation, nausea, vomiting, stomach pain, headache, dizziness, lung congestion, unconsciousness

Long Term: irritation, nausea, headache, kidney damage, liver damage, unconsciousness

Skin

Short Term: irritation

Long Term: irritation, reproductive effects

Eye

Short Term: irritation, eye damage

Long Term: irritation, eye damage

Ingestion

Short Term: gastrointestinal irritation, nausea, vomiting, stomach pain, weight loss, headache, dizziness, diarrhea, reproductive effects

Long Term: kidney damage, liver damage, reproductive effects

OSHA Regulatory Status

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

*** Section 3 - Composition/Information on Ingredients***

CAS #	Component / EU Number	Percent	Symbol(s)	Risk Phrase(s)
75-12-7	Formamide 200-842-0	40-70	T	R:61
10378-23-1	Edta, tetrasodium, dihydrate	<0.001	Xi	R:36-38

Material Safety Data Sheet

Material Name: Chromosome 12 DIG Probe

MSDS ID: VEN-172

*** Section 4 - First Aid Measures***

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

Skin

Wash contaminated areas with soap and water. Thoroughly clean and dry contaminated clothing before reuse. Get medical attention, if needed.

Eyes

Flush eyes with plenty of water for at least 15 minutes. Then get immediate medical attention.

Ingestion

If swallowed, get medical attention.

*** Section 5 - Fire-Fighting Measures***

See Section 9 for Flammability Properties

Flammable Properties

Slight fire hazard.

Extinguishing Media

carbon dioxide, regular dry chemical, regular foam, water

Protective Equipment and Precautions for Firefighters

Wear full protective fire fighting gear including self contained breathing apparatus (SCBA) for protection against possible exposure.

Fire Fighting Measures

Move container from fire area if it can be done without risk. Avoid inhalation of material or combustion by-products.

Hazardous Combustion Products

Thermal decomposition or combustion products: oxides of carbon, oxides of nitrogen, oxides of sulfur

Sensitivity to Mechanical Impact

Not sensitive

Sensitivity to Static Discharge

Not sensitive

*** Section 6 - Accidental Release Measures***

Occupational Spill/Release

Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Keep unnecessary people away, isolate hazard area and deny entry.

*** Section 7 - Handling and Storage***

Handling Procedures

Wash thoroughly after handling.

Storage Procedures

Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

Material Safety Data Sheet

Material Name: Chromosome 12 DIG Probe

MSDS ID: VEN-172

*** Section 8 - Exposure Controls/Personal Protection***

Exposure Limits

Formamide (75-12-7)

ACGIH:	10 ppm TWA Skin - potential significant contribution to overall exposure by the cutaneous route
NIOSH:	10 ppm TWA; 15 mg/m3 TWA Potential for dermal absorption
OSHA:	20 ppm TWA; 30 mg/m3 TWA 30 ppm STEL; 45 mg/m3 STEL
Austria:	18 ppm STEL (4 X 15 min); 32 mg/m3 STEL (4 X 15 min) 9 ppm TWA; 16 mg/m3 TWA skin notation
Belgium:	10 ppm TWA; 18 mg/m3 TWA Skin
Denmark:	10 ppm TWA; 18 mg/m3 TWA Potential for cutaneous absorption
Finland:	20 ppm STEL; 37 mg/m3 STEL 10 ppm TWA; 19 mg/m3 TWA Potential for cutaneous absorption
France:	20 ppm TWA; 30 mg/m3 TWA
Germany (DFG):	skin notation
Greece:	30 ppm STEL; 45 mg/m3 STEL 20 ppm TWA; 30 mg/m3 TWA skin - potential for cutaneous absorption
Ireland:	30 ppm STEL; 45 mg/m3 STEL 20 ppm TWA; 30 mg/m3 TWA
Portugal:	10 ppm TWA [VLE-MP] skin - potential for cutaneous exposure
Spain:	10 ppm TWA [VLA-ED]; 19 mg/m3 TWA [VLA-ED] skin - potential for cutaneous exposure
Sweden:	10 ppm LLV; 20 mg/m3 LLV 15 ppm STV; 30 mg/m3 STV Skin notation
United Kingdom:	30 ppm STEL; 56 mg/m3 STEL 20 ppm TWA; 37 mg/m3 TWA

Ventilation

Provide adequate ventilation. Ensure compliance with applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Eyes/Face

Safety glasses or goggles are recommended when there is a potential for eye contact. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Protective Clothing

Lab coat or apron.

Glove Recommendations

Wear appropriate chemical resistant gloves.

Respiratory Protection

No respirator is required under normal conditions of use.

Material Safety Data Sheet

Material Name: Chromosome 12 DIG Probe

MSDS ID: VEN-172

*** Section 9 - Physical and Chemical Properties***

Physical State:	Liquid	Appearance:	Not available
Physical Form:	liquid	Odor:	Not available
Odor Threshold:	Not available	pH:	7.4
Melting/Freezing Point:	Not available	Boiling Point:	Not available
Decomposition:	Not available	Flash Point:	not flammable
Evaporation Rate:	Not available	LEL:	Not available
UEL:	Not available	Vapor Pressure:	Not available
Vapor Density (air = 1):	Not available	Density:	~1.12 g/mL
Specific Gravity (water = 1):	Not available	Water Solubility:	miscible
Log KOW:	Not available	Coeff. Water/Oil Dist.:	Not available
Auto Ignition:	Not available	Viscosity:	Not available
Volatility:	Not available		

*** Section 10 - Stability and Reactivity***

Chemical Stability

Stable at normal temperatures and pressure.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

Materials to Avoid

bases, metals, oxidizing materials

Decomposition Products

Thermal decomposition or combustion products: oxides of carbon, oxides of nitrogen, oxides of sulfur

Possibility of Hazardous Reactions

Will not polymerize.

*** Section 11 - Toxicological Information***

Acute and Chronic Toxicity

Component Analysis - LD50/LC50

The components of this material have been reviewed in various sources and the following selected endpoints are published:

Formamide (75-12-7)

Inhalation LC50 Rat >3900 ppm 6 h; Oral LD50 Rat >5000 mg/kg

RTECS Acute Toxicity (selected)

The components of this material have been reviewed, and RTECS publishes the following endpoints:

Formamide (75-12-7)

Inhalation: >3900 ppm/6 hour Inhalation Rat LC50

Oral: 4000 mg/kg Oral Rat LD50; 5577 mg/kg Oral Rat LD50; 5570 mg/kg Oral Rat LD50

Skin: 17 gm/kg Skin Rabbit LD50

Acute Toxicity Level

Formamide (75-12-7)

Toxic: inhalation

Moderately Toxic: ingestion

Slightly Toxic: dermal absorption

Irritation/Corrosivity

respiratory tract irritation, skin irritation, eye irritation

RTECS Irritation

The components of this material have been reviewed, and RTECS publishes the following endpoints:

Formamide (75-12-7)

100 mg Eyes Rabbit severe

Material Safety Data Sheet

Material Name: Chromosome 12 DIG Probe

MSDS ID: VEN-172

Local Effects

Formamide (75-12-7)

Irritant: inhalation, skin, eye

Edta, tetrasodium, dihydrate (10378-23-1)

Irritant: skin, eye

Carcinogenicity

Component Carcinogenicity

None of the substances in this preparation are listed by ACGIH, OSHA, NIOSH, NTP, IARC, Austria, Belgium, Denmark, France, Germany, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, or United Kingdom.

Mutagenic

No information available for the mixture.

RTECS Mutagenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Reproductive Effects

Available data characterizes this substance as a reproductive hazard.

RTECS Reproductive Effects

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Tumorigenic

No information available for the mixture.

RTECS Tumorigenic

The components of this material have been reviewed, and RTECS publishes data for one or more components.

Medical Conditions Aggravated by Exposure

None known.

*** Section 12 - Ecological Information***

Component Analysis - Aquatic Toxicity

Formamide (75-12-7)

Fish: 96 Hr LC50 Brachydanio rerio: 9135 mg/L [static]; 96 Hr LC50 Leuciscus idus: 4600-9300 mg/L [static]

Algae: 72 Hr EC50 Desmodesmus subspicatus: >500 mg/L; 96 Hr EC50 Desmodesmus subspicatus: >500 mg/L

Invertebrate: 48 Hr EC50 Daphnia magna: >500 mg/L

Mobility

No data available for the mixture.

Persistence & Degradation

No data available for the mixture.

Bioaccumulative Potential

No data available for the mixture.

*** Section 13 - Disposal Considerations***

Disposal Methods

Dispose in accordance with all applicable regulations.

Component Waste Numbers

The U.S. EPA has not published waste numbers for this product's components.

Material Safety Data Sheet

Material Name: Chromosome 12 DIG Probe

MSDS ID: VEN-172

*** Section 14 - Transport Information***

US DOT Information

Not regulated.

TDG Information

Not regulated.

ADR Information

Not regulated.

RID Information

Not regulated.

IATA Information

Not regulated.

ICAO Information

Not regulated.

IMDG Information

Not regulated.

*** Section 15 - Regulatory Information***

U.S. Federal Regulations

None of this products components are listed under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), or CERCLA (40 CFR 302.4), TSCA 12(b), or require an OSHA process safety plan.

SARA 311/312

Acute Health: Yes Chronic Health: Yes Fire: No Pressure: No Reactive: No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component / EC Number	CAS	CA	MA	MN	NJ	PA
Formamide	75-12-7	Yes	Yes	Yes	Yes	Yes

California Proposition 65

Not regulated under California Proposition 65

Canadian Regulations

This product has been classified in accordance with the criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

Canada WHMIS

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

Formamide (75-12-7)

0.1 %

WHMIS Classification

D2A, D2B.

European Regulations

This preparation has been classified for the European Union according to Annex VI Directives 67/548/EEC and 99/45/EC.

Germany Water Classification

Formamide (75-12-7)

ID Number 1509, hazard class 1 - low hazard to waters

EU Marking and Labelling

Symbols

T Toxic

Risk Phrases

R61 May cause harm to the unborn child.

Safety Phrases

S35 This material and its container must be disposed of in a safe way.

S36/37 Wear suitable protective clothing and gloves.

S53 Avoid exposure - obtain special instructions before use.

Material Safety Data Sheet

Material Name: Chromosome 12 DIG Probe

MSDS ID: VEN-172

Japanese Regulations

Japan Designated Chemical Substances (PRTR Law)

No components of this material are subject to reporting requirements as specified by the "Law Concerning Reporting, etc. of Releases to the Environment of Specific Chemical Substances and Promoting Improvements in Their Management" nor are they included in the "Pollutant Release and Transfer Register (PRTR)" of designated chemicals.

Japan Poisonous and Deleterious Substances

No components of this material are specified as poisonous or deleterious substances, as regulated by Japan under the Poisonous and Deleterious Substances Control Law.

Industrial Safety and Health Law - Flammable Materials

No components of this material are specifically identified in Table 6-2 of the Enforcement Order of the Industrial Safety and Health Law which, if used in the workplace, require designation of an Operations Chief during confined space work and periodic machine inspections.

Industrial Safety and Health Law - Label Disclosure

No components of this material are specifically required to be indicated on a container label as specified by Article 18 of the Enforcement Order of the Industrial Safety and Health Law.

Industrial Safety and Health Law - Organic Solvents

No components of this material are specifically identified in Table 6-2 of the Enforcement Order of the Industrial Safety and Health Law which, if used in the workplace, require designation of an Operations Chief during confined space work and periodic machine inspections.

* * * Section 16 - Other Information * * *

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ADR - European Road Transport; AU - Australia; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CN - China; CPR - Controlled Products Regulations; DFG - Deutsche Forschungsgemeinschaft; DOT - Department of Transportation; DSL - Domestic Substances List; EEC - European Economic Community; EINECS - European Inventory of Existing Commercial Chemical Substances; EPA - Environmental Protection Agency; EU - European Union; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IMDG - International Maritime Dangerous Goods; JP - Japan; Kow - Octanol/water partition coefficient; KR - Korea; LEL - Lower Explosive Limit; LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; MAK - Maximum Concentration Value in the Workplace; MEL - Maximum Exposure Limits; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NTP - National Toxicology Program; NZ - New Zealand; OSHA - Occupational Safety and Health Administration; PH - Philippines; RCRA - Resource Conservation and Recovery Act; RID - European Rail Transport; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TDG - Transportation of Dangerous Goods; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States

Full text of R phrases in Section 3

R36 Irritating to eyes.

R38 Irritating to skin.

R61 May cause harm to the unborn child.

Other Information

Limitations: The information and recommendations set forth in this MSDS are believed to be correct as of this date. Ventana Medical Systems, Inc. makes no warranty with respect to the content of this MSDS and disclaims all liability from reliance thereon.

"RTECS®" is a United States trademark owned and licensed under authority of the U.S. Government, by and through Accelrys, Inc. Portions ©Copyright 2011, U.S. Government. All rights reserved.

New MSDS: 11/8/2011

Material Safety Data Sheet

Material Name: Chromosome 12 DIG Probe

MSDS ID: VEN-172

End of Sheet VEN-172