Silver Fern Chemical, Inc.
SAFETY DATA SHEET
Diethanolamine 99

Section 1: Identification

1.1 Product identifier:
Diethanolamine 99

Other means of identification:

Chemical names: DEA; 2,2'-iminodiethanol; diolamine; ethanol, 2,2'-iminobis-

1.2 Recommended use:
Chemical raw material for industrial and professional uses.

1.3 Details of the supplier of the Safety Data Sheet:

Distributor
Silver Fern Chemical, Inc.
2226 Queen Anne Avenue North, Suite C
Seattle, WA 98109, USA
Phone: 1-866-282-3384

1.4 Emergency Phone No. **24 Hour Emergency Contact**
Infotrac: 1-800-535-5053
Outside USA & Canada: 1-352-323-3500

Section 2: Hazard Identification

2.1 Classification:
Serious eye damage – Cat. 1; H318
Acute toxicity (Oral) – Cat. 4; H302
Skin irritation – Cat. 2; H315
Specific target organ toxicity (repeated exposure) – Cat. 2 ; H373
Suspected of causing cancer - Carc. 2;H351
Suspected of damaging fertility or the unborn child - Repr. 2;H361

2.2 Label elements:

Danger.
Causes serious eye damage.
Harmful if swallowed.
Causes skin irritation.
May cause damage to organs (blood, kidneys, liver) through prolonged or repeated exposure if swallowed.
Suspected of causing cancer.
Suspected of damaging fertility or the unborn child.

Prevention:
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear eye protection, face protection, protective gloves and protective clothing.
Do not breathe fume, mist, vapors or spray.
Wash hands and exposed skin thoroughly after handling.
Do not eat, drink or smoke when using this product.

Response:
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.

IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
Rinse mouth.

IF ON SKIN: Wash with plenty of water and soap.
If skin irritation occurs: Get medical attention.
Take off contaminated clothing and wash it before reuse.

Disposal:
Dispose of contents and container in accordance with local, regional, national and international regulations.

2.3 Other hazards:
May be corrosive to copper and copper alloys (e.g. brass), some aluminum alloys, zinc, zinc alloys and galvanized surfaces.

Section 3: Composition/Information on Ingredients

3.1 Substances:

Chemical Name	CAS No.	EC #	Wt.%	GHS Classification
Diethanolamine Other identifiers: DEA; 2,2’-iminodiethanol	111-42-2	203-868-0	99 - 100	Eye dam. 1; H318 Acute tox. 4; H302 Skin irrit. 2; H315 STOT RE 2; H373 Carc. 2;H351 Repr. 2;H361

Section 4: First-Aid Measures

4.1 First-aid measures:

Inhalation: Remove source of exposure or move to fresh air. Get medical advice or attention if you feel unwell or are concerned.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately call a Poison Centre or doctor. Immediate treatment is required.

Skin Contact: Take off immediately contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Immediately wash gently and thoroughly with lukewarm, gently flowing water and mild soap for 15-20 minutes. If skin irritation occurs, get medical advice or attention. Thoroughly clean clothing, shoes and leather goods before reuse or dispose of safely.

Ingestion: Immediately call a Poison Centre or doctor. Do not induce vomiting. If vomiting occurs naturally, lie on your side in the recovery position. Rinse mouth with water.

4.2 Most important symptoms and effects, acute and delayed:

Inhalation: Symptoms of exposure may include coughing, wheezing, sore throat, chest pain, difficult breathing, nausea and vomiting.

Eye Contact: Causes severe irritation and eye damage. Serious damage, even blindness, may result if treatment is delayed. Symptoms include redness, pain and tearing. If DEA is rinsed out of the eye immediately, eye injury may be prevented.

Skin Contact: Causes severe skin irritation. Symptoms include local pain, redness and swelling. Prolonged contact may cause chemical burns, blister formation and possible tissue destruction.

Ingestion: Harmful if swallowed; oral toxicity in rats ranged from 680 to1820 mg/kg (LD_{50}). Swallowing can cause severe irritation and/or burns of the digestive tract. Symptoms include abdominal and chest pain, nausea, vomiting and diarrhea. Repeated exposure by ingestion may cause adverse effects to the kidney and liver and may cause anemia. Aspiration into the lungs during ingestion or vomiting may cause lung injury.

4.3 Immediate medical attention and special treatment:

If in eyes or if swallowed, call emergency medical services.

Section 5: Fire-fighting Measures

5.1 Suitable extinguishing media:

Water fog or fine spray, alcohol-resistant foam or dry chemical. Use water spray to cool fire-exposed containers.

Unsuitable extinguishing media: High pressure water streams may scatter hot liquid and may spread the fire. Violent steam generation or eruption may occur upon application of direct water stream to hot liquids.

5.2 Specific hazards arising from the chemical:

Product can burn if heated or if involved in a fire [Flash point = 163°C (325°F)].
Heat from a fire can cause a rapid build-up of pressure inside containers, which may cause explosive rupture.
During a fire, smoke may contain vaporized DEA in addition to unidentified toxic and/or irritating compounds.
Thermal decomposition and combustion products may include toxic nitrogen oxide, hydrogen cyanide, formaldehyde carbon monoxide, carbon dioxide and ammonia gases.

5.3 Special protective equipment and precautions for fire-fighters:

Evacuate the area and fight fire from a safe distance or a protected location.
Thermal decomposition products such as nitrogen oxides and hydrogen cyanide are hazardous to health.
Do not enter without specialized protective equipment suitable for the situation.
Approach the fire from upwind to avoid hazardous vapors.
Burning liquids may be extinguished by dilution with water. Water spray may be used to flush spills away from ignition sources. Avoid all contact with this material during fire-fighting operations. Wear chemical resistant clothing (chemical splash suit) and positive-pressure self-contained breathing apparatus.
Contain water run-off if possible.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Isolate the area; keep all unprotected people away from the spill area. Ventilate the area.
Extinguish or remove all ignition sources.
Prevent inhalation exposures, skin and possible eye contact.
Wear protective gloves, protective clothing and face protection (See Section 8).
Ensure clean-up is conducted by trained personnel only.
Do not touch or walk through the spilled material.
Spilled material may pose a slipping hazard.

6.2 Environmental precautions:

Prevent material from contaminating soil and from entering sewers or waterways.

6.3 Methods and material for containment and cleaning up:

Stop or reduce leak if safe to do so. Contain the spill with earth, sand or other suitable non-combustible absorbent.
Keep materials which can burn away from spilled product. Do not absorb with sawdust, woodchips or other cellulose materials.
Clean up spills immediately.
Scoop up spilled product and any contaminated absorbents into appropriate, labeled containers. Contaminated absorbent may pose the same hazards as the spilled product. Flush the area with water and collect wash-water for proper disposal.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

Do not eat, drink or smoke when using this product.
Wear eye/face protection and protective gloves and other equipment required for the workplace.
Wash hands and exposed skin after handling.
Do not breathe fume/mist/vapors/spray.
Avoid generating airborne fumes/vapors/mist from this product.
Handle this product with adequate ventilation.
Keep away from flames and hot surfaces.
Prevent handling with incompatible materials such as sodium nitrite, strong acids and oxidizing agents (see Section 10).
Prevent release of this material to the environment; prevent spills and keep away from drains.
Never perform any welding, cutting, soldering, drilling or other hot work on an empty vessel, container or piping until all liquid and vapors have been cleared.
Inspect containers for leaks before handling. Prevent damage to containers. Assume that empty containers contain residues which are hazardous.

Remove contaminated clothing promptly. Keep contaminated clothing in closed containers; discard or launder before rewearing. Maintain good housekeeping. Inform laundry personnel of contaminant's hazards. Do not take working clothes home.

7.2 Conditions for safe storage:

Keep containers tightly closed when not in use.
Store in a cool, dry and well-ventilated place. Store away from sunlight, heat and ignition sources.
Keep storage area away from work areas.
Store away from strong oxidants, strong acids and other incompatible materials (see Section 10).
Do not store in containers made of aluminum, copper, brass or other copper alloys, zinc, zinc alloys or galvanized steel.
Store separated from food and feedstuffs.

Section 8: Exposure Controls / Personal Protection

8.1 Control parameters

Occupational Exposure Limits: Consult the local jurisdiction (e.g. province/territory) for their occupational exposure limits. Legislation for Canadian OH&S is available at : http://www.ccohs.ca/oshanswers/information/govt.html

Ingredient	ACGIH® TLV®	U.S. OSHA PEL	Other exposure limits
Diethanolamine (Inhalable fraction and vapor)	1 mg/m^3 Skin	15 mg/m^3 (3 ppm)	NIOSH REL: 3 ppm (15 mg/m^3) Quebec (Canada) VEMP: 3 ppm (13 mg/m^3)

8.2 Engineering controls

Engineering controls: Use only in a well-ventilated area. Use local exhaust ventilation for operations involving heating or spraying. Use local exhaust ventilation in workplaces where general ventilation is not adequate to control the amount in air. Ventilation system should be made of corrosion-resistant material.

If engineering controls and work practices are not effective in controlling exposure to this material or if adverse health symptoms are experienced, then wear suitable personal protection equipment including approved respiratory protection. Have appropriate equipment available for use in emergencies such as spills or fire.

8.3 Individual protection measures (PPE)

Eye/Face protection: Wear chemical safety goggles. Wear a face-shield or full-face respirator when needed to prevent exposure to liquid, vapour or fume.

Skin protection: Wear chemical protective gloves. Wear clean, body-covering, protective coveralls to prevent skin exposure. If spill or splashing is possible, wear chemical protective apron and boots.
Recommended materials for protective gloves and clothing include butyl rubber, neoprene rubber. Resistance of specific materials can vary from product to product; evaluate resistance under conditions of use and maintain clothing carefully.

Respiratory protection: If concentrations in air exceed the occupational exposure limits, then wear respiratory protection. Respiratory protection should not be necessary unless the product is heated to release vapours or a mist is created. If airborne vapour or mist exposure is likely wear a chemical cartridge respirator with cartridges to protect against ethanolamine, or a powered air-purifying respirator with cartridges to protect against ethanolamine, or a full-face self-contained breathing apparatus. For spills or uncontrolled releases, wear a supplied-air respirator.

If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection A respiratory protection program that meets the regulatory requirement, such as OSHA's 29 CFR 1910.134, ANSI Z88.2 or Canadian Standards Association (CSA) Standard Z94.4, must be followed whenever workplace conditions warrant a respirator's use.

Other protection: Workplaces should have a safety shower, hand-wash station and eye-wash fountain available.

Section 9: Physical and Chemical Properties

Basic physical and chemical properties:	
Appearance:	Liquid at temperatures above freezing point. Colorless, viscous. Solid at temperatures below freezing point.
Odor:	Ammonia-like, fish-like disagreeable odor.
Odor threshold:	0.27 ppm
pH:	11 (10% solution)
Melting point/freezing point:	27 ºC (81 ºF) (melting); -2 ºC (28 ºF) (freezing)
Initial boiling point and boiling range:	268°C (514°F)
Flash point:	163°C (325°F) PMCC; ASTM D93
Evaporation Rate:	< 0.01 (n-Butyl Acetate = 1)
Flammability (solid, gas):	Not applicable
Upper/lower flammability or explosive limits:	Not available
Vapor pressure:	0.000037 kPa at 25 ºC (77 ºF)
Vapor density:	3.7 (air=1)
Relative density:	1.09 (water = 1)
Solubility (ies):	95.4 g/L @ 20°C. Soluble in water
Partition coefficient (n-octanol/water, log K_{ow}):	-2.46 25°C; OECD 107
Auto-ignition temperature:	365-370 °C (689-698°F) [DIN 51794]
Decomposition temperature:	200 ºC (392 ºF)
Viscosity:	390 Pa.s at 30 ºC (dynamic) 357.2 mm^2/s @ 30°C (kinematic)

Section 10: Stability and Reactivity

10.1 Reactivity:

Not reactive under normal conditions of use.

10.2 Chemical stability:

Unstable under certain conditions - see Conditions to Avoid.
Alkanolamine substances are decomposed by light and slowly oxidized by air, turning yellow and then brown. This reaction is accelerated by heat and the presence of metals.
Alkanolamine substances are oxidized by air slowly with evolution of heat. This reaction may lead to spontaneous combustion if the substance is on an adsorbent or on a high surface area material (e.g. absorbent material or thermal insulation).

10.3 Possibility of hazardous reactions:

Heating increases the risk of fire.
Heating above 60°C in aluminum can result in corrosion and generation of flammable hydrogen gas.
Reacts with cellulose nitrate causing fire and explosion hazard.
Reacts violently with strong acids and strong oxidants (e.g. nitric acid, hydrogen peroxide).
Contact with nitrosating agents, under acidic conditions such as nitrous acid, sodium nitrite or nitrogen oxides, can form nitrosamines some of which are potent carcinogens.

10.4 Conditions to avoid:

Avoid high temperatures and contact with sources of ignition.
Avoid exposing product to air, light and moisture.
Avoid direct sunlight.

10.5 Incompatible materials:

Contact with strong acids, strong oxidizing agents, halogenated hydrocarbons, nitrating agents may increase risk of vigorous or violent reaction.
Contact with alkali metals, metal hydrides and aluminum may generate flammable hydrogen gas.
Contact with Isocyanates and Isothiocyanates: reaction may be rapid, evolving heat.
Product may be corrosive to aluminum alloys at elevated temperatures, many 400 series stainless steel alloys, copper, zinc, and aluminum bronze.
In combination with water, the product may be corrosive to copper and copper alloys (e.g. brass), some aluminum alloys, zinc, zinc alloys, and galvanized surfaces.
Diethanolamine attacks some polymers including polyvinylchloride, polyurethane, polyamide imide, polyvinylidene fluoride and high-density polyethylene at elevated temperatures.

10.6 Hazardous decomposition products:

Decomposes at temperatures above 200°C; hazardous decomposition products may include nitrogen oxides, ammonia, hydrogen cyanide, formaldehyde. Hazardous decomposition products depend upon temperature, air supply and the presence of other materials.
Oxidation in air may form transient, organic peroxides or thermally unstable N-oxides such as hydroxylamines and carbamates form as well as nitrosamines, which are suspected cancer causing chemicals. Oxidation of Diethanolamine and decomposition of products is accelerated by light, heat, and/or presence of metals or metal oxides.

Section 11: Toxicological Information

11.1 Information on toxicological effects

Likely routes of exposure

Eye contact, Skin contact, Inhalation.

Acute toxicity

Inhalation: LC_{50} greater than 0.2 mg/L (greater than saturated vapor concentration and no mortalities). Inhalation test equivalent to OECD test guideline 403 and was for an 8 hour exposure time. Calculated 4-hour exposure LC_{50} = 0.4 mg/L.

Based on information from animal tests, breathing vapors, spray or fume may cause nose and throat irritation, lung injury. Symptoms may include coughing, shortness of breath, difficult breathing and tightness in the chest. Symptoms may develop hours after exposure and are made worse by physical effort.

Ingestion: Harmful if swallowed. Based on information from animal tests swallowing may cause liver and kidney damage, brain damage and blood changes.

Skin: Dermal exposures caused dose-related anemia and toxicity to the liver and kidneys in rats and mice.

11.2 Acute toxicity data:

Ingredient	**LD_{50} Oral**	**LD_{50} Dermal**	**LC_{50} Inhalation (4 hrs.)**
Diethanolamine (DEA)	1600 mg/kg (rat)	8180 mg/kg (rabbit)	> 0.4 mg/L (rat)

Skin corrosion / irritation:

Human experience and animal studies caused moderate or severe skin irritation.
Irritating to skin in an animal study according to OECD test guideline 404 (24, 48, 72 hours) in rabbit.

Serious eye damage / irritation:

Human experience and animal tests caused serious eye damage.
Highly irritating, causing serious eye damage in an animal study according to OECD test guideline 405 (24, 48, 72 hours) in rabbit.

STOT (Specific Target Organ Toxicity) Single Exposure:

Inhalation: Short-term inhalation of 858-6000 mg/m^3 (cited as 200-1400 ppm) Diethanolamine aerosol or vapor caused breathing difficulties and some deaths in male rats. Continuous inhalation of 107 mg/m^3 (cited as 25 ppm) for 216 hours (9 days) resulted in increased liver and kidney weights and altered kidney and liver function.

Ingestion: Ingestion of large quantities may cause liver and kidney damage, brain damage and blood changes. Skin and ingestion exposures have caused dose-related anemia and toxicity to the liver and kidneys in rats and mice.

Skin absorption: In male rats, a significant increase in relative kidney and liver weights occurred following a single oral dose of 200 mg/kg and higher. Signs of anemia were present in female rats ingesting 79 mg/kg/day and higher for 2 weeks and in male rats ingesting 162 mg/kg/day and higher for 2 weeks.

Aspiration hazard:

Due to the corrosive nature of DEA, any aspiration during ingestion or vomiting could result in severe lung injury.

11.3 Chronic toxicity:

STOT (Specific Target Organ Toxicity) Repeated Exposure:

In tests with animals, long-term ingestion, inhalation and skin contact exposures to high doses caused anemia and damage to the liver and kidney.
A NOAEC for systemic effects in rats was 15 mg/m^3, exposure by inhalation.
A NOAEC for upper respiratory tract irritation was 3 mg/m^3.
A LOAEL for systemic effects by dermal application was 32 mg/kg bw/day in rats. Effects included dermal hyperkeratosis, anemia, liver toxicity and nephropathy.
In female rats, repeated oral doses, a LOAEL of 14 mg/kg bw/day was reported for anemia.

Respiratory and / or skin sensitization:

Not known to be a skin sensitizer. Not known to be a respiratory sensitizer.
Not sensitizing in a study conducted according to OECD guideline 406, in Guinea pig.

Germ cell mutagenicity:

Evidence from animal studies, cultured mammalian cells, and bacterial studies does not indicate that DEA is a mutagen.
Negative results from in vitro tests according to OECD guidelines 471 (E. coli) and 476 (S. typhimurium).
Negative results from in vivo tests in mice according to OECD guideline 474.

Reproductive effects:

Conclusions cannot be drawn from the limited studies available. In animal studies, effects on fertility were reported for male rats at doses that also caused generalized toxicity.

Developmental effects:

Conclusions cannot be drawn from the limited studies available. Limited data from animal studies does not indicate that DEA is a developmental toxin. Oral LOAEL for developmental toxicity = 150 mg/kg bw/day in rat, for effects on blood (test equivalent to OECD 414).

Effects on or via lactation:

No information was located.

11.3 Chronic toxicity, continued:

Carcinogenicity:

NTP Report: Under the conditions of 2 year dermal studies, there was no evidence of carcinogenic activity of DEA in F344/N rats administered 16, 32 or 64 mg/kg DEA or in female F344/N rats administered 8, 16 or 32 mg/kg. There was clear evidence of carcinogenic activity of DEA in male and female B6C3F1 mice based on increased incidences of liver neoplasms in males and females and increased incidences of renal tubule neoplasms in males. IARC Monograph Volume101 reports a mechanism for liver tumor induction in mice exposed to DEA that involves the inhibition of choline uptake in the liver. As humans are less susceptible to choline deficiency than rats or mice, the results may not be predictive of induction of cancer in humans.

IARC lists DEA in Group 2B – Possibly carcinogenic to humans.
ACGIH designates DEA as A3 – confirmed animal carcinogen with unknown relevance to humans.
DEA is not listed on the NTP Report On Carcinogens.

Interactions with other chemicals:

Diethanolamine may react chemically with nitrosating compounds under certain conditions to form nitrosamines, which are mutagenic and possibly carcinogenic.

Section 12: Ecological Information

12.1 Ecotoxicity:

LC_{50} fish = 1460 mg/L (*Pimephales promelas*; 96-hour; fresh water; static)
EC_{50} crustacea = 55 mg/L (*Daphnia magna*; 48-hour; fresh water; static)
ErC_{50} algae = 2.2 mg/L (*Pseudokirchneriella subcapitata*; 96-hour; fresh water; semi-static)
NOEC crustacea = 0.78 mg/L (*Daphnia magna*; 21-day; fresh water; semi-static)

12.2 Persistence and degradability:

Degrades rapidly based on quantitative tests.
Biodegradation in water: 93% in 28 days, test according to OECD 301F.

12.3 Bioaccumulative potential:

Low potential to bioaccumulate based on log K_{ow} -2.46 @ 20°C, test data according to OECD 107.

12.4 Mobility in soil:

Volatilization of DEA from water is very slow (Henry's Law Constant (H) is 5.35E-14 atm m^3/mol).
Potential for mobility in soil is very high (Koc between 0 and 50).
Log soil organic carbon partition coefficient (log Koc) is estimated to be 0.60.

12.5 Other information:

Not dangerous for the ozone layer (According to EU Council Regulation No 1005/2009)

Section 13: Disposal Considerations

13.1 Disposal methods

Do NOT discard into any sewers, on the ground or into any body of water. Store material for disposal as indicated in Section 7 Handling and Storage.
Dispose of in accordance with local/regional/national/ international regulations.
For unused, uncontaminated product, the preferred options include sending to a licensed, permitted recycler, reclaimer incinerator or other thermal destruction device.

USA: Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste.

Other information:

Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. Silver Fern Chemical Inc. HAS NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SDS SECTION 2.

Section 14: Transport Information

14.1 U.S. Hazardous Materials Regulation (DOT 49CFR):

UN3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (DIETHANOLAMINE), Class 9, PG III

Reportable Quantity for U.S. Shipments: 100 lbs (45.4 kg) for Diethanolamine

14.2 IMO classification:

Not regulated

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Diethanolamine: Category Y

14.3 ICAO/IATA classification:

Not regulated

14.4 Canadian Transportation of Dangerous Goods (TDG):

Not regulated

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations:

USA:

OSHA: This material is considered a hazardous chemical by the OSHA Hazard Communication Standard 29 CFR 1910.1200 (2012).

Toxic Substances Control Act (TSCA) Section 8(b): All ingredients are listed on the TSCA Inventory.

Additional USA regulatory lists: Clean Air Act -Diethanolamine.

SARA Title III - Section 313. (Diethanolamine)

California Safe Drinking Water and Toxic Enforcement Act, Proposition 65: Diethanolamine (CAS No. 111-42-2) is on the list of chemicals known to the State to cause cancer.

State Right To Know (Diethanolamine): Massachusetts. New Jersey. Pennsylvania.

California Proposition 65 Warning:

⚠ WARNING: This product can expose you to chemicals including [Diethanolamine], which is known to the State of California to cause cancer. For more information go to www.P65Warnings.ca.gov.

Canada:

DSL status: Listed on the DSL (Domestic Substances List).

NPRI Substances: Not listed.

European Union:

European Inventories: 2',2''-iminodiethanol listed in EINECS # 203-868-0.

Other international inventories

Australia: Present on the Inventory of Chemical Substances (AICS).

China: Present on the Chinese inventory (IECSC), 11481.

Japan: Present on ENCS ; Diethanolamine (2)-354; (2)-302.

Korea: Present on the Inventory of Existing and Evaluated Chemical Substances; Diethanolamine KE-20959.

Mexico: Present on the inventory (INSQ).

New Zealand:	Present on the inventory (NZIoC) HSNO Approval: HSR002962.
Philippines:	Present on the inventory (PICCS).
Taiwan:	Present on the inventory (TCSI).
Thailand:	Present on the inventory (TCSI / TECI) 55-1-00670.
Turkey:	Present on the inventory. EC# 203-868-0
Vietnam:	Present on the national chemicals inventory NCI 0623.

Section 16: Other Information

Revision date:

June 7, 2018

Revision summary:

Previous version, September 2016
Revisions since previous version: Section 11: new information on repeated exposures.
Section 14 Bulk shipping description for DOT 49CFR.

References and sources for data:

CCOHS – ChemInfo
www.ccohs.ca/oshanswers/information/govt.html
HSDB – Hazardous Substances Data Bank
IARC Monograph Volume101
RTECS® - Registry of Toxic Effects of Chemical Substances
National Toxicology Program (NTP) – Report on Carcinogens.

Additional information:

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