

MATERIAL SAFETY DATA SHEETProduct name: **Niax Catalyst A-1**

MSDS Number: 725

Revision: 1.0 2000.02.17

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1. PRODUCT AND COMPANY IDENTIFICATIONProduct name: **Niax Catalyst A-1**

Chemical name: Tertiary amine / glycol mixture

Use(s): Used in polyurethane manufacturing.

Supplier: Witco Canada Inc.
565 Coronation Drive
West Hill, Ontario M1E 2K3, CanadaManufacturer: CK Witco Corporation
199 Benson Road
Middlebury, CT 06749, USA

Prepared by: Product Safety Department

Print date: 2000.02.17

Emergency telephone number: CANUTEC (24 hours) 613-996-6666

For MSDS, Product Safety, or regulatory inquiries, call: Ms. Stephanie Dametto 416-724-3590 or 1-800-353-1087

2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	CAS#	% W/W
Bis(2-dimethylaminoethyl)ether	3033-62-3	70.0 %
Dipropylene Glycol	25265-71-8	30.0 %

Note(s): NIAX® catalyst A-99 is bis(2-dimethylaminoethyl) ether (CAS # 3033-62-3).

3. HAZARDS IDENTIFICATION**APPEARANCE**

Physical state

Liquid

Color

Clear, colorless

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Causes the following effects:

- discomfort or pain
- severe excess redness
- swelling
- tissue destruction
- fissures
- ulceration
- possibly bleeding into the injured area

Effects of repeated exposure

Skin contact may cause:

- a severe cumulative dermatitis

Eye contact

Acute effects

Causes severe irritation.

Causes the following effects:

- discomfort
- pain
- excess blinking
- tear production
- marked excess redness of the conjunctivae
- swelling of the conjunctivae
- chemical burns of the cornea

Vapor may cause:

- temporary disturbance of vision

(See "Notes to Physician")

Medical conditions aggravated by exposure

Skin contact may aggravate:

- an existing dermatitis

Other effects of exposure

No adverse effects anticipated from available information.

POTENTIAL ENVIRONMENTAL EFFECTS

All available ecological data have been taken into account for the development of the hazard and precautionary information contained in this Material Safety Data Sheet.

4. FIRST AID MEASURES

Swallowing

If patient is fully conscious, give two glasses of milk or water at once. Do not induce vomiting. Obtain medical attention immediately.

Skin

Immediately remove contaminated clothing and shoes. Wash skin with soap and water. Obtain medical attention. Wash clothing before re-use. Discard contaminated leather articles such as shoes and belt.

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Inhalation

Remove to fresh air. Give artificial respiration if not breathing. If breathing is difficult, oxygen may be given by qualified personnel. Obtain medical attention.

Eye contact

Immediately flush eyes with water and continue washing for at least 15 minutes. Obtain medical attention without delay, preferably from an ophthalmologist.

Notes to physician

There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical condition of the patient. Severe irritant to the skin and eye. Moderately toxic by swallowing. Moderately toxic by absorption across the skin. Due to the irritant nature of the material, the stomach should be evacuated carefully in cases of poisoning by swallowing. Exposure to the vapor may cause minor transient edema of the corneal epithelium. This condition, referred to as "glauropsia", "blue haze" or "blue-gray haze", produces a blurring of vision against a general bluish haze and the appearance of halos around bright objects. The effect disappears spontaneously within a few hours of the end of an exposure and leaves no sequelae. Although not detrimental to the eye per se, glauropsia predisposes an affected individual to physical accidents and reduces the ability to undertake skilled tasks, such as driving a motorized vehicle.

5. FIRE-FIGHTING MEASURES

Flash point: 74 °C

Flammable limits

Lower limit: 1 %(V)

Upper limit: 5.1 %(V)

Autoignition temperature: Not available

Hazardous combustion products

Burning can produce the following combustion products:

Oxides of carbon.

Oxides of nitrogen.

Carbon monoxide is highly toxic if inhaled; carbon dioxide in sufficient concentrations can act as an asphyxiant.

Acute overexposure to the products of combustion may result in irritation of the respiratory tract.

Special fire fighting procedures

Do not direct a solid stream of water or foam into hot, burning pools: this may cause frothing and increase fire intensity.

Special protective equipment for firefighters

Self-contained breathing apparatus. Body covering protective clothing.

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Extinguishing media

Suitable: Large fires:
- alcohol-type foam or universal-type foams
Small fires:
- CO2
- dry chemical

Unusual fire and explosion hazards

Following products may be produced during a fire: Oxides of carbon Oxides of nitrogen This material may produce a floating fire hazard in extreme fire conditions.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Wear suitable protective equipment.

Methods for cleaning up

Collect for disposal.

7. HANDLING AND STORAGE

HANDLING

Handling precautions

Do not get in eyes, on skin, on clothing. Avoid breathing vapor. Use with adequate ventilation. Wash thoroughly after handling. Do not swallow.

STORAGE

Storage requirements

Keep away from heat and flame. Keep container closed.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

PERSONAL PROTECTION

Respiratory protection

Self-contained breathing apparatus in high vapor concentrations.

Hand protection / protective gloves

Recommended order of use:

4H

Butyl

Neoprene

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Nitrile (NBR)
PVC-coatedEye protection
MonogogglesOther protective equipment
Chemical apron
Eye bath
Safety shower

ENGINEERING CONTROLS

Ventilation

General (mechanical) room ventilation is expected to be satisfactory where this product is stored and handled in closed equipment.

Special, local ventilation is needed at points where vapors can be expected to escape to the workplace air.

EXPOSURE LIMITS

No exposure limits have been established

Consult local authorities for acceptable provincial values.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE

Physical state	Liquid
Color	Clear, colorless
Odor	Amine
Odor threshold	Not available

OTHER PROPERTIES

Boiling point	190 °C at STP unless specified below.
Melting point	-80 °C at STP unless specified below. (sets to glass)
pH	Not available
Specific gravity (H ₂ O=1)	0.9020 at 25 °C (1,013 hPa)
Vapor pressure	68.9 hPa (51.68 mmHg) at 38 °C <1 psia (38°C)
Vapor density (air=1)	Heavier than air
Solubility in water	Complete

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Evaporation rate (Butyl Acetate=1)	0.08
Partitioning coefficient	Not determined
Flash point	74 °C Method: Pensky-Martens closed cup ASTM D 93
Molecular weight	Mixture

10. STABILITY AND REACTIVITY

Stability: Stable.

Stability - Conditions to avoid
None known.Incompatible materials
Strong oxidizing agents.
Acids.
Halogens.

Hazardous polymerization: Will not occur.

Hazardous polymerization - Conditions to avoid
None known.

11. TOXICOLOGICAL INFORMATION

<u>Component toxicology</u> Bis(2-dimethylaminoethyl)ether Acute toxicity - Swallowing:	LD50 - Rat Result: 1,048 - 1,202 mg/kg
<u>Component toxicology</u> Dipropylene Glycol Acute toxicity - Swallowing:	LD50 - Rat Result: 14.85 g/kg
<u>Component toxicology</u> Bis(2-dimethylaminoethyl)ether Acute toxicity - Skin absorption:	LD50 - Rabbit Result: 213 - 537 mg/kg
<u>Component toxicology</u> Dipropylene Glycol Acute toxicity - Skin absorption:	LD50 - Rabbit Result: > 20 ml/kg

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<u>Component toxicology</u> Bis(2-dimethylaminoethyl)ether Chronic toxicity - Skin absorption:	LD50 - Rabbit Result: > 2000 mg/kg
<u>Component toxicology</u> Dipropylene Glycol Acute toxicity - Inhalation:	LC50 - Rat Result: < 1,500 mg/m3 Exposure time: 4 hrs
<u>Component toxicology</u> Bis(2-dimethylaminoethyl)ether Skin irritation - Skin contact:	Species: Rabbit Result: Severe erythema Classification: corrosive
<u>Component toxicology</u> Bis(2-dimethylaminoethyl)ether Eye irritation - Eye contact:	Species: Rabbit Result: Moderate corneal injury Classification: Severe eye irritant

SIGNIFICANT DATA WITH POSSIBLE RELEVANCE TO HUMAN HEALTH

Short-term repeated dermal applications (9 days) of aqueous solutions of NIAX Catalyst A-99, in the concentration range 2.5% to 10% (v/v), produced dose-related decreases in body weight and early nephrotoxic changes. However, no such effects were seen by subchronic sustained daily occluded contact with aqueous solutions containing 2% and less of the A-99. The recurrent daily dermal application of A-99 to pregnant rabbits during the period of maximum organogenesis produced evidence for maternal toxicity, but there was no indication of teratogenic or embryotoxic effects. Exposure of rats to vapor of A-99 caused mortalities after 3 or 4 exposures to 90 ppm, and after 6 to 9 exposures at 47 ppm. There were no fatalities with 9 exposures to 22 ppm. Cytoplasmic vacuolation of bronchial and bronchiolar epithelial cells and corneal opacities were seen at all concentrations.

A-99 was not genotoxic in the following in vitro studies: Ames test, Chinese Hamster Ovary (CHO) forward gene mutation test, and induction of UDS in rat hepatocytes. Weak, but not consistent, activity was seen in a CHO sister chromatid exchange test. However, there was no evidence for clastogenicity in vivo in a mouse peripheral blood micronucleus test.

A 2-hr/exposure of rabbits to A-99 vapor concentrations between 10 and 30 ppm produced increased corneal thickness and eye irritation. Rabbits exposed to 5 ppm A-99 vapor demonstrated a slight change in corneal thickness. No increased corneal thickness was noted in rabbits exposed to 0.1 or 1.0 ppm A-99 vapor.

Toxicity studies of A-99 indicate a moderate order of toxicity following a single peroral dose (LD50 = 677 mg/kg). In a 28-day repeated dose oral (gavage) toxicity study, rats were dosed with Niaux Catalyst A-400, a carboxylic acid salt of bis(2-dimethylaminoethyl)ether at 0, 100, 300 or 1000 mg/kg/day. Based on the results of this study, a no-observed-effect-level for systemic toxicity was 100 mg/kg/day.

12. ECOLOGICAL INFORMATION

All available ecological data have been taken into account for the development of the hazard and precautionary information contained in this Material Safety Data Sheet.

13. DISPOSAL CONSIDERATIONS

General: Incinerate in a furnace where permitted under appropriate federal, provincial, and local

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regulations.

14. TRANSPORT INFORMATION

TDG - Canada

Shipping Name: CORROSIVE LIQUID, POISONOUS, N.O.S. (Tertiary amine / glycol mixture)
Primary Class: 8
Subsidiary Class: 6.1
UN ID #: UN 2922
Packing group: II

IMDG Classification

Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (Tertiary amine / glycol mixture)
Class: 8
UN ID #: UN 2735
Packing group: II

THIS SUBSTANCE ALSO MEETS THE HAZARDOUS MATERIALS DEFINITION OF 6.1, PG1

ICAO Classification

Proper shipping name: AMINES, LIQUID, CORROSIVE, N.O.S. (Tertiary amine / glycol mixture)
Class: 8
UN ID #: UN 2735
Packing group: II

15. REGULATORY INFORMATION

WHMIS CLASSIFICATION

B3 Combustible liquid
D1B Toxic material causing immediate and serious effects.
E Corrosive material.

CPR Compliance

This product has been classified with the hazard criteria of the CPR, and the MSDS contains all the information required by CPR.

CHEMICAL INVENTORY

Canada: The ingredients of this product are on the DSL.

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- United States: The ingredients of this product are listed on the TSCA inventory or are exempt.
- Australia: This product, or the components, is listed or exempt from listing on the Australian Inventory of Chemical Substances (AICS).
- Japan: This product, or the components, is listed or exempt from listing on the Existing and New Chemical Substances (ENCS) list.
- Korea: This product is listed on the Existing Chemicals List (ECL).
- Philippines: This product, or the components, is listed or exempt from listing on the Philippines Inventory of Chemicals and Chemical Substances (PICCS).

16. OTHER INFORMATION

LEGEND

STP	Standard temperature and pressure
W/W	Weight/Weight

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The opinions expressed herein are those of qualified experts within CK Witco. We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information, these opinions and the conditions of use of this product are not within the control of CK Witco, it is the user's obligation to determine conditions of safe use of the product.