SynQuest Laboratories, Inc.

Date Printed: April 30, 2009

Date Prepared: April 30, 2009

MSDS for Z-2-Chloro-1,1,1,4,4,4-hexafluoro-2-butene

1 Section I

*** GENERAL INFORMATION ***

SynQuest Laboratories, Inc.
P.O. Box 309
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SynQuest Product #

1300-7-Z8

Chemical Name:

Z-2-Chloro-1,1,1,4,4,4-hexafluoro-2-butene

Synonyms:

Formula:

Chemical Family: Haloalkene

CAS#: [3414-09-7]

CF₃CH=CClCF₃

MW: 198.5

2 Section II *** HAZARDOUS INGREDIENTS/IDENTITY INFORMATION ***

OSHA ACGIH OTHER LIMITS

HAZARDOUS COMPONENTS

PEL TLV

RECOMMENDED %

Z-2-Chloro-1,1,1,4,4,4-hexafluoro-2-butene

NONE NONE

100

3 Section III *** PHYSICAL & CHEMICAL CHARACTERISTICS ***

BOILING POINT: $33-34^{\circ}$ C (as E/Z mixture) EVAPORATION RATE (Butyl acetate = 1): >1

VAPOR PRESSURE: 760 mmHg @ 33°C (as E/Z mixture) MELTING POINT: N/E

VAPOR DENSITY, (AIR=1) 6.9 (Calc.) REFRACTIVE INDEX: 1.3018 @ 17 °C (as E/Z mixture)

SPECIFIC GRAVITY: 1.487 @ 25°C (as E/Z mixture)

SOLUBILITY IN WATER Insoluble

APPEARANCE: Colorless liquid

4 Section IV *** FIRE & EXPLOSION HAZARD DATA ***

FLASH POINT: $32^{\circ}F(0^{\circ}C)$ (as E/Z mixture) METHOD USED: Lit.

FLAMMABLE LIMITS: LEL = N/E UEL = N/E

EXTINGUISHING MEDIA: Carbon dioxide, dry chemical, Foam

SPECIAL FIRE FIGHTING PROCEDURES: A self-contained breathing apparatus and full protective clothing should be worn when fighting fires. Keep cylinders cool with water spray.

UNUSUAL FIRE & EXPLOSION HAZARDS: Toxic fumes or mists of fluoride may be produced on thermal decomposition and/or during combustion.

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5 Section V *** REACTIVITY DATA ***

STABILITY (Choose one): () Unstable

(X) Stable

CONDITIONS TO AVOID: NA

INCOMPATABILITY (Materials to avoid): Reactive metals, oxidizing agents

HAZARDOUS DECOMPOSITION PRODUCTS: CO, CO₂, HF, NO_x generated during combustion

HAZARDOUS POLYMERIZATION (Choose one): () May occur

(X) Will not occur

6 Section VI

*** HEALTH HAZARD DATA ***

ROUTE(S) OF ENTRY: INHALATION? YES SKIN? YES INGESTION? YES

Inhalation: LC⁵⁰ 3 ppm/6 h (rat); LC^{Lo} 10 ppm / 1 h (human) (as E/Z mixture)

HEALTH HAZARDS (Acute and chronic):

Highly toxic by inhalation. May be harmful or fatal if swallowed or by skin absorption. May cause fatigue.

CARCINOGENICITY: NTP? NO IARC MONOGRAPHS? NO OSHA REGULATED? NO

SIGN & SYMPTOMS OF EXPOSURE: Depressed activity, difficulty breathing, pneumonia. May stimulate respiration. May cause cardiac irregularity.

MEDICAL CONDITIONS GENERALLY AGRIVATED BY EXPOSURE: No data available.

EMERGENCY FIRST AID PROCEDURES:

INHALATION: Remove victim to fresh air. If breathing is difficult administer oxygen. If breathing has stopped administer artificial respiration. Seek immediate medical attention. Rescue personal should take precautions to avoid exposure.

INGESTION: If conscious, wash out mouth with water. Seek immediate medical attention.

EYE CONTACT: Flush with water for at least 15 minutes. Obtain medical attention.

SKIN CONTACT: Wash in warm water, seek medical attention.

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7 Section VII *** PRECAUTIONS FOR SAFE HANDLING AND USE ***

STEPS TO BE TAKEN IF MATERIAL IS RELASED OR SPILLED: Evacuate area and allow to thoroughly ventilate before re-entry. Wear self-contained breathing apparatus when exposure possible.

WASTE DISPOSAL METHOD: Burn in approved incinerator in accordance with all Local, State, and Federal regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING: Store cylinders in a cool, dry area out of direct sunlight. Avoid breathing vapors. Avoid skin contact.

8 Section VIII

*** CONTROL MEASURES ***

RESPIRATORY PROTECTION (SPECIFY TYPE): Self-contained breathing apparatus.

VENTILATION: LOCAL EXHAUST: Required

MECHANICAL (GENERAL): Required

SPECIAL:

OTHER: Handle in closed system when possible.

PROTECTIVE GLOVES: Neoprene rubber or Silver Shield EYE PROTECTION: Safety glasses or chemical splash goggles

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: Emergency shower and eye-wash station.

WORK/HYGENIC PRACTICES: Wash after handling.

9 Section XI

*** REGULATORY INFORMATION ***

UN# 3383-A

DOT SHIPPING NAME: Toxic by inhalation liquid, flammable, N.O.S. Inhalation hazard zone A LISTS:

RCRA: Not listed CERCLA: Not listed SARA 313: Not listed

WHIMS: Health (3); Flammability (3); Reactivity (1)

TSCA: Not included on TSCA inventory, for R&D use only

EINICS:

NEW JERSEY RTK:

N/A = Not available N/E = Not established NA = Not applicable