SECTION 1 IDENTIFICATION OF THE SUBSTANCE

Product Name: CL-TKDK Cleaner

SECTION 2 HAZARDS IDENTIFICATION

Emergency Overview
Danger: Highly flammable.
State of matter: Liquid colorless
Odor: Mint-like

Potential environmental effects
Environmental precautions: Should not be released into the environment. Prevent further leakage or spillage if safe to do so.
Ecological information: See chapter 12

Potential health effects
Acute effects:
Eyes: Causes eye irritation.
Skin: Prolonged or repeated contact may dry skin and cause irritation
Inhalation: May cause respiratory tract irritation
Ingestion: Aspiration hazard if swallowed - can enter lungs and cause damage

Toxicological information: See chapter 11

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Weight %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Butanone, ethyl methyl ketone</td>
<td>78-93-3</td>
<td>99.50</td>
</tr>
</tbody>
</table>

Exposure limit(s): See chapter 8
Classification and hazard labeling: See chapter 15

SECTION 4 FIRST AID MEASURES

Eye contact: Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.
Skin contact: Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Wash contaminated clothing before re-use. If skin irritation persists, call a physician.
Inhalation: Move to fresh air in case of accidental inhalation of vapors. If breathing is irregular or stopped, administer artificial respiration. Call a physician immediately.
Ingestion: If swallowed, seek medical advice immediately and show this container or label. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person.

SECTION 5 FIRE-FIGHTING MEASURES

Flammability:
Flash point: -9 °C closed cup; 9°C open cup
Auto ignition temperature: 515°C

Explosion limits:
Lower explosion limit: 1.4 % (V)
Upper explosion limit: 11.4 % (V)

Fire/explosion: Vapors may form explosive mixtures with air. Flash back possible over considerable distance

Hazardous combustion products: Carbon oxides

Suitable extinguishing media:
Water spray
Alcohol-resistant foam
Dry chemical
Carbon dioxide (CO2)

Unsuitable extinguishing media: No information available

Protection measures and instructions: Wear self-contained breathing apparatus and protective suit.

Further information: Cool containers / tanks with water spray.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Personal precautions: Keep people away from and upwind of spill/leak. Remove all sources of ignition. Do not breathe vapors or spray mist.

Environmental precautions: Should not be released into the environment. Prevent further leakage or spillage if safe to do so.
Methods for cleaning up
Soak up with inert absorbent material and dispose of as hazardous waste.

Exposure controls / personal protection
See chapter 8

SECTION 7 HANDLING AND STORAGE

Safe handling advice
Provide sufficient air exchange and/or exhaust in work rooms. Wear personal protective equipment. Take precautionary measures against static discharges. Ensure all equipment is electrically grounded before beginning transfer operations.

Advice on protection against fire and explosion
Keep away from heat and sources of ignition. Use explosion-proof equipment.

Storage
Keep containers tightly closed in a dry, cool and well-ventilated place.

SECTION 8 EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures
Provide sufficient air exchange and/or exhaust in work rooms.

Personal protective equipment

Eyes
Safety glasses with side-shields

Skin
Protective suit Safety shoes

Inhalation
In case of insufficient ventilation, wear suitable respiratory equipment

Hand protection
Gloves suitable for permanent contact:
- Material: butyl-rubber
- Break through time: 4 H
- Material thickness: 0.5 mm

Unsuitable gloves:
- Material: Polyvinylchloride, leather, nitrile rubber / nitrile latex
- Natural rubber / natural latex.

Hygiene measures
Wash hands before breaks and immediately after handling the product.

Protective measures
Wear suitable protective equipment

Exposure Guidelines

Components Exposure limit(s)
2-BUTANONE

US. ACGIH Threshold Limit Values time weighted average 200 ppm
US. ACGIH Threshold Limit Values Short term exposure limit 300 ppm
US. NIOSH: Pocket Guide to Chemical Hazards Recommended exposure limit (REL): 300 ppm (590 mg/m3)
US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) Permissible exposure limit 200 ppm (590 mg/m3)
US. OSHA Table Z-1-A (29 CFR 1910.1000) time weighted average 200 ppm (590 mg/m3)
US. OSHA Table Z-1-A (29 CFR 1910.1000) Short term exposure limit 300 ppm (885 mg/m3)
US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants Time Weighted Average (TWA) Permissible Exposure Limit (PEL): 300 ppm (885 mg/m3)
US. California Code of Regulations, Title 8, Section 5155. Airborne Contaminants Ceiling Limit Value: 300 ppm (885 mg/m3)

EU. Indicative Exposure and Directives relating to the protection of risks related to work exposure to chemical, physical, and biological agents. time weighted average 200 ppm (600 mg/m3)

PEL= Permissible Exposure Limits
TLV= Threshold Limit Value
EL= Excursion Limit

Time Weighted Average (8 hr.)
STEL= Short Term Exposure Limit (15 min.)
WEEL= Workplace Environmental Exposure Level

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Color
colorless

Odor
mint-like

Form
liquid

Boiling point/boiling range
79.6 °C

Flash point
-9 °C closed cup; 9°C open cup

Lower explosion limit
1.4 % (V)

Upper explosion limit
11.4 % (V)

Vapor pressure
121.323 hPa at 25 °C

Solubility
partly miscible

Viscosity
0.51 mm2/s

Viscosity, dynamic
0.41 mPa.s

Melting point/range
-86.3 °C

Density
0.805 g/cm3

SECTION 10 STABILITY AND REACTIVITY
Conditions to avoid: Heat, flames and sparks
Hazardous decomposition products: Carbon oxides
Incompatible products: Strong oxidizing agents. Incompatible with acids. Halogenated compounds
Hazardous reactions: Hazardous polymerisation does not occur.

SECTION 11 TOXICOLOGICAL INFORMATION
Acute oral toxicity: Acetone: LD50 rat: 2,737 mg/kg; literature value
8 Acute inhalation toxicity: Acetone: LC50 rat: 23,500 mg/l; literature value; 8 h
Acute dermal toxicity: Acetone: LD50 rabbit: 6,480 mg/kg; literature
Skin irritation: Acetone: rabbit: moderately irritating; literature value
Eye irritation: Acetone: rabbit: irritating; literature value

SECTION 12 ECOLOGICAL INFORMATION
Ecotoxicity effects
Toxicity to fish: LC50 Bluegill sunfish: 4,467 mg/l; 96 h; literature value
LC50 Pocelia reticulate: 5,700 mg/l; 24 h; literature value
Toxicity to daphnia: LC50 Pimephales promelas: 3,200 mg/l; 96H; literature value
Toxicity to algae: EC50 Daphnia magna: < 520 mg/l; 48 h; literature value

SECTION 13 DISPOSAL CONSIDERATIONS
Waste from residues / unused products: In accordance with local and national regulations. Do not contaminate ponds, waterways or ditches with chemical or used container. The product should not be allowed to enter drains, water courses or the soil.
Uncleaned empty packaging: Do not burn, or use a cutting torch on, the empty drum. Triple rinse containers.
Handling and storage: See chapter 7
Exposure controls / personal protection: See chapter 8

SECTION 14 TRANSPORT INFORMATION
DOT/49CFR: UN 1193 Methyl ethyl ketone, 3, II
ADR: UN 1193 Methyl ethyl ketone, 3, II
RID: UN 1193 METHYL ETHYL KETONE, 3, II
ADNR: UN 1193 METHYL ETHYL KETONE, 3, II
IMDG: UN 1193 METHYL ETHYL KETONE, 3, II, EmS F-E, S-D
ICAO/IATA: UN 1193 Methyl ethyl ketone, 3, II

SECTION 15 REGULATORY INFORMATION
U.S. Federal Classifications:
OSHA Hazards: Flammable Liquid, Mild eye irritant, Mild respiratory irritant
SARA 311/312: Fire Hazard, Acute Health Hazard
U.S. Regulated Ingredients:
Hazard information reporting:
US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 313
Toxic Chemicals (40 CFR 372.65) - Supplier Notification Required

Components | CAS-No.
--- | ---
Butanone | 78-93-3

US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Components | CAS-No.
--- | ---
Butanone | 78-93-3

US. New Jersey Community Right-To-Know Survey, Table A: NJ Environmental Hazardous Substances [EHS] List (N.J. Admin. Code Title 7 Section 1G-2.1)

Components | CAS-No.
--- | ---
Butanone | 78-93-3

US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Components | CAS-No.
--- | ---
Butanone | 78-93-3
US. EPA Emergency Planning and Community Right-To-Know Act (EPCRA) SARA Title III Section 302

Extremely Hazardous Substance (40 CFR 355, Appendix A)

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

Spill reporting US. EPA CERCLA Hazardous Substances (40 CFR 302)

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>Reportable Quantity</th>
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<tbody>
<tr>
<td>Butanone</td>
<td>78-93-3</td>
<td>5,000 lbs.</td>
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</table>

Health

US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)

<table>
<thead>
<tr>
<th>Components</th>
<th>CAS-No.</th>
<th>CAS-No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not listed</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Inventories

- EU list of existing chemical substances
  All chemical constituents are listed in: EU list of existing chemical substances (See chapter 3)

- US TSCA Inventory
  All chemical constituents are listed in: US TSCA Inventory (See chapter 3)

- Australian Inv. of Chem. Substances AICS
  All chemical constituents are listed in: Australian Inv. of Chem. Substances AICS (See chapter 3)

- Canadian Domestic Substances List DSL
  All chemical constituents are listed in: Canadian Domestic Substances List DSL (See chapter 3)

- Jap. Inv. of Exist. & New Chemicals ENCS
  All chemical constituents are listed in: Jap. Inv. of Exist. & New Chemicals ENCS (See chapter 3)

- Korean Exist. Chemicals List ECL
  All chemical constituents are listed in: Korean Exist. Chemicals List ECL (See chapter 3)

- Philippines Inv. of Chem. Subst. PICCS
  All chemical constituents are listed in: Philippines Inv. of Chem. Subst. PICCS (See chapter 3)

- Inv. of Exist. Chem. Substances in China
  All chemical constituents are listed in: Inv. of Exist. Chem. Substances in China (See chapter 3)

Other international regulations

- WHMIS Classification
  B2: Flammable Liquid
  D2B: Toxic Material Causing Other Toxic Effects

SECTION 16 OTHER INFORMATION

Hazard Ratings

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Fire</th>
<th>Reactivity</th>
<th>Hazard</th>
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<tbody>
<tr>
<td>HMIS</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NFPA</td>
<td>1</td>
<td>3</td>
<td>0</td>
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</table>

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