

To the best of our knowledge, the information contained here in is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

GHS label elements

Hazard symbols:

**Signal word:** Danger**Hazard statement and precautionary statement:**

- Highly flammable liquid and vapour
- May be harmful if swallowed
- Causes skin irritation
- Causes damage to Sensory system, systemic toxicity and central nervous system-single exposure
- May cause damage to kidney-single exposure
- May cause respiratory irritation-single exposure
- Causes damage to sensory system, central nervous system and peripheral nervous system through prolonged or repeated exposure.

Precautionary statements:

- Keep out of reach of children. Read label before use. If medical advice is needed: Have product container or label at hand.

Prevention

- Keep away from ignition sources such as heat/sparks/open flame— No smoking.
- Take precautionary measures against static discharge.
- Wear protective gloves and eye/face protection as specified by the competent authority.
- Do not breathe dust/mist/vapors.
- Use only in a well-ventilated area. Call a doctor/physician if you feel unwell.
- Do not eat, drink or smoke when using this product.
- Avoid contact during pregnancy/while nursing.
- Wash hands thoroughly after handling.

Response

- In case of fire, use dry chemical, CO₂, water splay (fog) or foam for extinction.
- IF SWALLOWED: Call a doctor/physician if you feel unwell. Rinse mouth.
- IF ON SKIN: Gently wash with plenty of soap and water.
- Wash/Decontaminate removed clothing before reuse.
- If skin irritation occurs, seek medical advice/attention.
- IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a doctor/physician.
- Collect spillage.

Storage

- Store in cool/well-ventilated place. Store locked up.
- Call a doctor/physician if exposed or you feel unwell.

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Disposal

- Waste must be disposed of according to applicable regulations.

3 Composition/information on ingredients**Substance or mixture; mixture****Composition;**

| Chemical name | concentration (%) | CAS number |
|----------------------|-------------------|------------|
| 2-butanone | 30-40 | 78-93-3 |
| Methanol | 30-40 | 67-56-1 |
| 1-Methoxy-2-propanol | 1-10 | 107-98-2 |

4 First-aid measures**Inhalation;**

Remove the victim from the contamination immediately to fresh air. Keep the victim warm and quiet and arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.

Skin contact;

Remove all contaminated clothing, shoes and socks from the affected areas as quickly as possible. Wash the affected area under running water using a mild soap. If irritation persists, arrange for transport to the nearest medical facility for examination and treatment by a physician as soon as possible.

Eye contact;

Gently rinse the affected eyes with clean water for at least 15 minutes. Remove contact lenses if easily possible. and refer for medical attention.

Ingestion;

Never give anything by mouth to someone who is unconscious or convulsing. If the victim is responsive, give him one or two glasses of water. And refer for medical attention.

5 Fire-fighting measures**Suitable extinguishing media;**

Use dry chemical, CO₂, water spray (fog) or foam.

Fire fighting procedures;

Use water spray to cool fire-exposed surfaces and to protect personnel. Shut off "fuel" to fire. If a leak or spill has not ignited, use water spray to disperse the vapors.

Avoid spraying water directly into storage containers due to danger of boil over.

Unusual fire/explosion hazard;

Flammable liquid, can release vapors that form flammable mixtures at temperatures at or above the flashpoint.

Special protective equipment and precautions for fire fighters;

Fire fighters should wear boots, overalls, gloves, eye and face protection and breathing apparatus.

6 Accidental release measures

Shut off all sources of ignition; No smoking or flames in area. Absorb spill with inert material (e.g.,

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dry sand or earth), then place in closed containers using non-sparking tools. Flush residual spill (area) with copious amounts of water.

7 Handling and storage

Handling;

Use only in the well-ventilated areas.
 Make available in the work area emergency shower and eyes wash.
 Avoid contact with skin or eyes.

Storage;

Close up the container and keep it in dark cool(0~20) place.
 Keep away from combustible materials and sources of ignition.

8 Exposure controls/personal protection

Exposure guidelines;

| | |
|----------------------|------------|
| ACGIH TLV-TWA (ppm) | |
| 2-butanone | :200 |
| Methanol | :200(skin) |
| 1-Methoxy-2-propanol | :100 |
| ACGIH STEL(ppm) | |
| 2-butanone | :300 |
| Methanol | :250(skin) |
| 1-Methoxy-2-propanol | :150 |

9 Physical and chemical properties

| | |
|--|--------------------------------|
| Appearance | |
| Physical state | :Liquid |
| Color | :Black |
| Odor | :Solvent odor |
| Boiling point | :65 to 80 |
| Flash point | :-2.0 (closed cup) |
| Upper/lower flammability or explosive limits | :Lower 1.8 vol%, Upper 36 vol% |
| Vapor pressure | :11.2kPa (20) |
| Vapor density (Air = 1) | :None known |
| Relative density | :0.81(20) |
| Solubility (Water) | :None known |
| Partition coefficient: n-octanol/water | :None known |
| Auto-ignition temperature | :470 |
| Decomposition temperature | :No data |

10 Stability and reactivity

Stability: The product is stable.
 Conditions and materials to avoid: Not available
 Hazardous decomposition products: These products are carbon oxides

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11 Toxicological information

Acute toxicity;

2-butanone

LD50(oral,rat): 2737mg/kg(TXAPA9 19, 699, 1971)
LCLo(ihl,rat): 23500mg/m³/8H(AIHAAP 20, 364, 1959)
LD50(skin,rabbit): 6480mg/kg(SHELL* MSDS-5390-4)
TCLo(ihl,human): 1000mg/m³(VCVGK* -, 417, 1994)
LDLo(oral,human): 714.3mg/kg(VCVGK* -, 417, 1994)

Methanol

LD50(oral,rat): 5628mg/kg(GTPZAB 19(11),27,1975)
LC50(ihl,rat): 64000ppm/4H(NPIRI* 1,74,1974)
TDLo(oral,man): 9450µL/kg(AJEMEN 16,538,1998)
TCLo(ihl,human): 300ppm(NPIRI* 1,74,1974)

1-Methoxy-2-propanol

LD50(oral,rat): 6600mg/kg (RTECS)
TCLo(ihl,human): 3000ppm (RTECS)

Skin corrosion/irritation;

2-butanone

Skin; rabbit; 402mg/24H; Mild(TXAPA9 19, 276, 1971)

Methanol

Skin; rabbit; 20mg/24H; Moderate(85JCAE -,187,1986)

1-Methoxy-2-propanol

Skin; rabbit; 500mg open; Mild (RTECS)

Serious eye damage/irritation;

2-butanone

Eye; rabbit; 80mg(TXAPA9 19, 276, 1971)

Methanol

Eye; rabbit; 100mg/24H; Moderate(85JCAE -,187,1986)

1-Methoxy-2-propanol

Eye; rabbit; 500mg/24H; Mild (RTECS)
human; ; Severe(SIDS, 2001)(ACGIH, 2001)(PATY, 1994)

Respiratory or skin sensitization;

2-butanone

Methanol

Allergic dermatitis; human, skin(PATY 4th,1994)
No skin sensitization ;Magnusson-Kligman maximization test, guinea pig(EHC 196,1997: DFGOT vol. 16,2001)

1-Methoxy-2-propanol

Not available

Germ cell mutagenicity;

2-butanone

Reverse mutation assay in *S.typhimuriun* and *E.coli*; Negative
Sex chromosome loss and nondisjunction; *S.cerevisiae*; 33800ppm(MUREAV 149, 339, 1985)

Methanol

Mutation in microorganisms; mouse; lymphocyte; 7900mg/L(ENMUDM 7(Suppl 3),10,1985)

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1-Methoxy-2-propanol
Not available

Carcinogenicity;

2-butanone
Not available
Methanol
Not available
1-Methoxy-2-propanol
Not available

Reproductive toxicity;

2-butanone
TCLo(ihl, rat): 2900mg/m³(female 6-10 D preg); Specific Developmental Abnormalities -
craniofacial(VCVGK* -, 418, 1994)
Methanol
TCLo(ihl, rat): 10000ppm/7H(7-15 D preg)(FAATDF 5,727,1985)
TDLo(ori, rat): 5200μL/kg(10 D preg)(REPTED 11,503,1997)
1-Methoxy-2-propanol
TCLo(ihl, rat): 3000ppm/6H(female 6-15D preg)(RTECS)
TDLo(ori, mouse): 115.5gm/kg(male 7D preg)(RTECS)

STOST-single exposure;

2-butanone
The influence of the central nervous system, rat/mouse(EHC 143, 1992; PATTY 4th, 1994;
IRIS 2003)
The influence of kidney, oral, rat(DFGOT vol 12,1999; IRIS 2003; ATSDR 1992)
The respiratory tract irritation, human (ACGIH 7th, 2001; DFGOT vol 12,1999; PATTY 4th,
1994; ATSDR 1992)
Methanol
The restraint of central nervous system and damage of the visual organ, human,
oral or ihl(EHC 196,1997; ACGIH, 7th,2001; DFGOT vol.16, 2001),
The respiratory tract irritation, rat,(EHC 196,1997; PATTY 4th,1994),
Anesthesia, rat, mouse and rhesus monkey(EHC 196,1997;PATTY 4th,1994)
1-Methoxy-2-propanol
Rat, mouse; ihl, and Rabbit; skin, disappearance of reflection and get up(SIDS, 2001)

STOST-repeated exposure;

2-butanone
The sensory paralysis of hand and arm, human(EHC 143, 1992; DFGOT vol 12, 1999; IRIS 2003)
The dmade of central nervous system, human(DFGOT vol 12, 1999; IRIS 2003)
Methanol
The restraint of central nervous system and damage of the visual organ, human,
oral or ihl(EHC 196,1997; ACGIH, 7th,2001; DFGOT vol.16, 2001),
The respiratory tract irritation, rat,(EHC 196,1997; PATTY 4th,1994),
Anesthesia, rat, mouse and rhesus monkey(EHC 196,1997;PATTY 4th,1994)
1-Methoxy-2-propanol
Not available

Aspiration hazard.

2-butanone
Not available

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Methanol
Not available
1-Methoxy-2-propanol
Not available

12 Ecological information

Toxicity:

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LD50(oral,rat): 6600mg/kg (RTECS)
TCLo(ihl,human): 3000ppm (RTECS)

Persistence and degradability:

2-butanone
Not available
Methanol
This material is biodegradable.
1-Methoxy-2-propanol
This material is biodegradable.

Bioaccumulative potential:

2-butanone
Not available
Methanol
Not available
1-Methoxy-2-propanol
Not available

Mobility in soil:

2-butanone
Not available
Methanol
Not available
1-Methoxy-2-propanol
Not available

13 Disposal considerations

Scrap materials may be disposed by licensed contractor or burn in an approved incinerator.
Do not dump into sewer, on the ground or into any body of water.

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Follow national and local regulations.

14 Transport information

Follow all regulations in your country.

| | |
|-------------------------|----------------------------|
| UN Number | :1210 |
| UN Proper Shipping Name | :Printing ink, flammable |
| Transport hazard class | :Class 3(Flammable liquid) |
| Packing Group | : |
| Environmental hazards | :No |

15 Regulatory information

Follow all regulations in your country.

Content of RoHS Directive material Cd<100ppm Pb, Hg, Hexavalent Cr, PBB, PBDE<1000ppm

16 References

- 1) Solvent, dye MSDS
- 2) Results of Eco-toxicity tests of chemicals conducted by Ministry of the Environment in Japan (-2006)
- 3) International Chemical Safety Cards

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