

SAFETY DATA SHEET

1 IDENTIFICATION

Product name :JP-K33
Name of company :Hitachi Industrial Equipment Systems Co., Ltd
Address :1-1,Higashitaga-cho 1-chome, Hitachi-shi, Ibaraki-ken, Japan
Tel :+81-294-36-8682
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Recommended use of the chemical
and restrictions on use :Printing Ink for industrial Marking

2 HAZARDS IDENTIFICATION

Physico-chemical endpoints : Flammable liquid Category 2
Acute toxicity - oral : Category 5
Acute toxicity - dermal : Not available
Acute toxicity - inhalation (air) : Not identified
Acute toxicity - inhalation (vapors) : Category 5
Acute toxicity - inhalation (dust, mist) : Not identified
Skin corrosion/irritation : Category 2
Eye damage/irritation : Category 2
Sensitization - respiratory : Not identified
Sensitization - skin : Not available
Germ cell mutagenicity : Not available
Carcinogenicity : Not identified
Toxic to reproduction : Category 1
Effects on or via lactation : Not identified
Specific target organ systemic toxicity : (Single exposure)
Category 1 Central nervous system
Category 2 Kidney
Category 3 Respiratory tract irritation
:(Repeated exposure)
Category 1 Central nervous system
Category 1 Peripheral nervous system
Aspiration toxicity : Category 2
Hazardous to the aquatic environment
-Acute hazard : Not available
-Chronic hazard : Not available

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GHS label elements

Hazard symbols:

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

- Highly flammable liquid and vapor
- May be harmful if swallowed
- May be harmful if inhaled
- Causes skin irritation
- Causes serious eye irritation
- May damage fertility or the unborn child
- Causes damage to central nervous system-single exposure
- May cause damage to kidney-single exposure
- May cause damage to airway irritant-single exposure
- Causes damage to central nervous system and peripheral nervous system through prolonged or repeated exposure
- May be harmful if swallowed and enters airways

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.

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Storage:

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

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 | 80-90 | 78-93-3 |
| Chrome III -Complex Dye | 5-15 | TSCA Registered |
| Toluene | 0.1-1 | 108-88-3 |

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 splay (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.

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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., 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°C) place.

Keep away from combustible materials and sources of ignition.

8 Exposure controls/personal protection**Exposure guidelines:**

| | |
|-------------------------|-------------|
| ACGIH TLV-TWA (ppm) | |
| 2-butanone | :200 |
| Chrome III -Complex Dye | :None known |
| Toluene | :20(skin) |

| | |
|-------------------------|-------------|
| ACGIH STEL(ppm) | |
| 2-butanone | :300 |
| Chrome III -Complex Dye | :None known |
| Toluene | :No data |

9 Physical and chemical properties

| | |
|--|----------------------------------|
| Appearance | |
| Physical state | :Liquid |
| Color | :Black |
| Odor | :Solvent odor |
| Boiling point ²⁾ | :80°C |
| Flash point | :-4.1°C (closed cup) |
| Upper/lower flammability or explosive limits ²⁾ | :Lower 1.7 vol%, Upper 11.4 vol% |
| Vapor pressure ²⁾ | :9.5kPa (20°C) |
| Vapor density (Air=1) ²⁾ | :2.41 (2-butanone) |
| Relative density | :0.85(20°C) |
| Solubility (Water) ²⁾ | :29g/100mL (20°C) (2-butanone) |
| Partition coefficient: n-octanol/water ²⁾ | :0.29 (2-butanone) |
| Auto-ignition temperature ²⁾ | :505°C |
| Decomposition temperature | :No data |

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10 Stability and reactivity

Stability: The product is stable.

Conditions and materials to avoid: Not available

Hazardous decomposition products: These products are carbon oxides

11 Toxicological information

Acute toxicity:

2-butanone

LD50(ori, 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(ori, human): 714.3mg/kg(VCVGK* -, 417, 1994)

Chrome III-Complex Dye

Oral >5000 (Rat LD50 (mg/kg))

Dermal >2000 (Rat LD50 (mg/kg))

Inhalation None known

Toluene

LD50(ori, rat): 636mg/kg(NRTXDN 2, 567, 1981)

LC50(ihl, rat): 49mg/m³/4h(GTPZAB 32810), 23, 1988)

LD50(skin, rabbit): 14100µL/kg(AIHAAP 30, 470, 1969)

TCLo(ihl, human): 750mg/m³/8h(VCVGH* -, 144, 1990)

LD50(ori, rat): 2.600, 5.500, 5.580, 5.900, 6.400, 7.000, 7.530mg/kg(EU-RAR No.30, 2003)

LD50(ori, rat): 4,800mg/kg(Calculate)

LC50(ihl, rat): 12.5, 28.1, 28.8, 33mg/m³/4h(EU-RAR No.30, 2003)

LC50(ihl, rat): 18mg/m³/4h = 4.800ppm(Calculate)

Skin corrosion/irritation:

2-butanone

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

Chrome III-Complex Dye

No (Rabbit test-OECD404 1981)

Toluene

Skin; rabbit; 20mg/24h; Moderate(85JCAE -, 29, 1986)

Serious eye damage/irritation:

2-butanone

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

Chrome III-Complex Dye

No (Rabbit test-84/449/EEC B.5)

Toluene

rabbit; ; Moderate(EU-RAR No.30, 2003)

Respiratory or skin sensitization:

2-butanone

Not available

Chrome III-Complex Dye

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No (Giunea pig test-84/449/EC B.6)
Toluene
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)
Chrome III-Complex Dye
None known
Toluene
Micronucleus test; mouse; ipr; 433µg/kg/24h(ARTODN 58, 106, 1985)
Sister chromatid exchange; human; ihl; 252µg/L/19Y(MUREAV 519, 171, 2002)

Carcinogenicity:

2-butanone
Not available
Chrome III-Complex Dye
None known
Toluene
Not available

Reproductive toxicity:

2-butanone
TCLo(ihl,rat): 2900mg/m³(female 6-10 D preg); Specific Developmental Abnormalities - craniofacial(VCVGK* -, 418, 1994)
Chrome III-Complex Dye
None known
Toluene
TDLo(ori,rat): 16mL/kg(6-21 D preg); Effects on Newborn - phisycal(REPEBL 47, 362, 2000)
TCLo(ihl,rat): 1800ppm(7-20 D preg); Specific Developmental Abnormalities - Central Nervous System(ARTODN 75, 103, 2002)
Human; "the study suggests an increased risk of late spontaneous abortions associated with exposure to toluene at levels around 88 ppm (range 50-150 ppm). The results of this study are used as a basis for the risk characterisation of developmental toxicity in humans."
"(EU-RAR No.30, 2003), (IRIS 2005, IARC 71, 1999, EHC 52, 1986, ATSDR 2000)

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)
Chrome III-Complex Dye
None known
Toluene
Human; ihl, 50-100ppm, feebleness, sleepiness, dizziness(CERI hazard sheet, 96-4,1997)
Human; ihl, 200-400ppm, paresthesia, vomituration(CERI hazard sheet, 96-4,1997)
Human; ihl, 500-800ppm, drunkenness, derangement, gait abonormality(CERI hazard sheet, 96-4,1997)

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Human: irritation for eye, nose and throat(EU-RAR No.30, 2003)

STOST-repeated exposure:

2-butanone

The sensory paralysis of hand and arm, human(EHC 143, 1992; DFGOT vol 12, 1999; IRIS 2003)
The damage of central nervous system, human(DFGOT vol 12, 1999; IRIS 2003)

Chrome III-Complex Dye

None known

Toluene

Human; ihl, stenosis for range of vision, headache with deafness and eye nystagmus, trembling, dynamic ataxia, amnesia, cerebral atrophy, renal dysfunction(CERI hazard sheet, 96-4,1997)
Human; The increasing of SGOT, hepatotoxicity with the adipose degeneration in liver cell and lymphocyte cell wetting(EU-RAR No.30, 2003)

Aspiration hazard:

2-butanone

Not available

Chrome III-Complex Dye

None known

Toluene

Not available

12 Ecological information

Ecotoxicity¹⁾:

2-butanone

mosquito fish(96h-LC50(mg/L)):5600

daphnids(48h-LC50(g/L)):>1000

Chrome III-Complex Dye

None known

Toluene

orange-red killifish(96h-LC50(mg/L)):25

daphnids(48h-EC50(mg/L)):4.1

brown shrimp(96h-EC50(mg/L)):3.5(EU-RAR, 2003)

Persistence and degradability:

2-butanone

Not available

Chrome III-Complex Dye

None known

Toluene

This material is biodegradable.

Bioaccumulative potential:

2-butanone

Not available

Chrome III-Complex Dye

None known

Toluene

Not available

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Mobility in soil:

2-butanone
Not available
Chrome III-Complex Dye
None known
Toluene
Not available

13 Disposal considerations

Scrap materials may be disposed by licensed contractor or burned in an approved incinerator.
Do not dump into sewer, on the ground or into any body of water.
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 | : II |
| 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) Results of Eco-toxicity tests of chemicals conducted by Ministry of the Environment in Japan
- 2) International Chemical Safety Cards

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