

# SAFETY DATA SHEET

## 1 IDENTIFICATION

Product name :JP-T71  
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  
Fax :+81-294-36-8975  
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 : Category 5  
Acute toxicity - inhalation (air) : Not identified  
Acute toxicity - inhalation (vapors) : Category 5  
Acute toxicity - inhalation (dust, mist) : Not available  
Skin corrosion/irritation : Category 2  
Eye damage/irritation : Category 2  
Sensitization - respiratory : Not identified  
Sensitization - skin : Category 1  
Germ cell mutagenicity : Category 1  
Carcinogenicity : Not identified  
Toxic to reproduction : Category 1  
Effects on or via lactation : Not identified  
Specific target organ systemic toxicity : (Single exposure)  
Category 1 Respiratory system  
Category 1 Central nervous system  
Category 2 Kidney  
Category 3 Respiratory tract irritation  
:(Repeated exposure)  
Category 1 Liver  
Category 1 Central nervous system  
Category 1 Bone  
Category 1 Peripheral nervous system  
Category 2 Nervous system  
Aspiration toxicity : Category 2  
Hazardous to the aquatic environment  
-Acute hazard : Not available  
-Chronic hazard : Not identified

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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 in contact with skin
- May be harmful if inhaled
- Causes skin irritation
- Causes serious eye irritation
- May cause genetic defects
- May damage fertility or the unborn child
- Causes damage to Respiratory system and central nervous system-single exposure
- May cause damage to kidney-single exposure
- May cause damage to airway irritant-single exposure
- Causes damage to liver, central nervous system, bone or peripheral nervous system through prolonged or repeated exposure
- May cause damage to 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, CO<sub>2</sub>, 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.

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- 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.

**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	60-70	78-93-3
Cyclohexanone	10-20	108-94-1
Chrome III-Complex Dye	5-10	TSCA Registered
Ethanol	1-10	64-17-5
phenol	<1	108-95-2

**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, CO<sub>2</sub>, 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

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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., 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
Cyclohexanone	:25(skin)
Chrome III-Complex Dye	:None known
Ethanol	:1000
phenol	:5(skin)

ACGIH STEL(ppm)	
2-butanone	:300
Cyclohexanone	:None known
Chrome III-Complex Dye	:None known
Ethanol	:No data
phenol	:None known

**9 Physical and chemical properties**

Appearance	
Physical state	:Liquid
Color	:Violet
Odor	:Solvent odor
Boiling point <sup>2)</sup>	:78.3°C
Flash point	:-4.2°C (closed cup)

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Upper/lower flammability or explosive limits <sup>2)</sup>	:Lower 1.1 vol%、Upper 19 vol%
Vapor pressure <sup>2)</sup>	:9.5kPa (20°C)
Vapor density (Air=1) <sup>2)</sup>	:2.41 (2-butanone)
Relative density	:0.88(20°C)
Solubility (Water) <sup>2)</sup>	:29g/100mL (20°C) (2-butanone)
Partition coefficient: n-octanol/water <sup>2)</sup>	:0.29 (2-butanone)
Auto-ignition temperature <sup>2)</sup>	:404°C
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

## 11 Toxicological information

### Acute toxicity:

2-butanone

LD50(oral,rat): 2737mg/kg(TXAPA9 19, 699, 1971)

LCLo(ihl,rat): 23500mg/m<sup>3</sup>/8h(AIHAAP 20, 364, 1959)

LD50(skin,rabbit): 6480mg/kg(SHELL\* MSDS-5390-4)

TCLo(ihl,human): 1000mg/m<sup>3</sup>(VCVGK\* -, 417, 1994)

LDLo(oral,human): 714.3mg/kg(VCVGK\* -, 417, 1994)

Cyclohexanone

LD50(oral,rat): 1800mg/kg(VCVGK\* -, 455, 1994)

LC50(ihl,rat): 19000mg/m<sup>3</sup>(VCVGK\* -, 455, 1994)

LD50(skin,rabbit): 1mL/kg(AIHAAP 30, 470, 1969)

LDLo(oral,human): 714.3mg/kg(VCVGK\* -, 455, 1994)

TCLo(ihl,human): 0.09mg/m<sup>3</sup>(VCVGK\* -, 455, 1994)

Chrome III-Complex Dye

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

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

Inhalation None known

Ethanol

TDLo(oral,man): 700mg/kg(NTOTDY 8,77,1986)

LD50(oral,rat): 9000mg/kg(VCVGK\* -, 93, 1984)

LC50(ihl,rat): 20000ppm/10h(NPIRI\* 1,44,1974)

TCLo(ihl,human): 2500mg/m<sup>3</sup>/20M(VCVGK\* -, 93,1984)

phenol

LDLo(oral,human): 140mg/kg(29ZWAE -,329,1968)

LD50(oral,rat): 512mg/kg(VCVGK\* -, 197, 1994)

LC50(ihl,rat): 316mg/m<sup>3</sup>/4h(VCVGK\* -, 197, 1994)

LD50(skin,rat): 1500mg/kg(VCVGK\* -, 197, 1994)

Calculated: LD50(oral,rat): 375mg/kg

### Skin corrosion/irritation:

2-butanone

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

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**Cyclohexanone**

Skin; rabbit; 500mg; Mild; Open(UCDS\*\*)  
 Skin; human; 50%/48h; Mild(ADVEA4 27, 189, 1992)

**Chrome III-Complex Dye**

No (Rabbit test-OECD404 1981)

**Ethanol**

Skin; rabbit; 20mg/24h; Moderate(85JCAE -, 189, 1986)

**phenol**

Skin; rabbit; 500mg/24h; Severe  
 Skin; rabbit; 100mg; Mild

**Serious eye damage/irritation:****2-butanone**

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

**Cyclohexanone**

Eye; rabbit; 250µg/24h; Severe(85JCAE -,289,1986)

**Chrome III-Complex Dye**

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

**Ethanol**

rabbit; 100mg/4S; Moderate(FCTOD7 20,573,1982)

**phenol**

Eye; rabbit; 5mg; Severe

**Respiratory or skin sensitization:****2-butanone**

Not available

**Cyclohexanone**

Skin; rabbit; 500mg; Mild; Open(UCDS\*\*)  
 Skin; human; 50%/48h; Mild(ADVEA4 27, 189, 1992)

**Chrome III-Complex Dye**

No(Giunea pig test-84/449/EC B.6)

**Ethanol**

Not available

**phenol**

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)

**Cyclohexanone**

Mutation in microorganisms; *S.typhimurium*; cells; 20µL/L(EJMBA2 18,213,1983)  
 Cytogenetic analysis; human; lymphocyte; 5µg/L(GISAAA 46(5), 76, 1981)  
 Mutation in mammalian somatic cells; hamster; ovary; 7500µL/L(ENMUDM 7(Suppl 3), 60, 1985)

**Chrome III-Complex Dye**

None known

**Ethanol**

DNA damage; *S.cerevisiae*; 850mmol/L(MUREAV 326,165,1995)  
 Mutation in microorganisms; *S.typhimurium*; 11pph(ENVRAL 52, 225, 1990)  
 Cytogenetic analysis; human; lymphocyte; 2.5pph/24h(MUREAV 537, 117, 2003)

**phenol**

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Micronucleus test; hamster; ovary; 175mg/L(EMMUEG 26,240,1995)  
 Cytogenetic analysis; hamster; embryo; 100µmol/L(MUREAV 373,113,1997)  
 Mutation in microorganisms; S.typhimurium; 40µmol/plate(MUREAV 90, 91, 1981)  
 Reverse mutation assay in S.typhimurium and E.coli; Negative

**Carcinogenicity:**

2-butanone  
 Not available  
 Cyclohexanone  
 Not available  
 Chrome III-Complex Dye  
 None known  
 Ethanol  
 TDLo(oral,mouse): 320mg/kg/50W-I(CALEDQ 13,345,1981)  
 phenol  
 TDLo(skin,mouse): 16mg/kg/40W-I(CNREA8 19,413,1959)

**Reproductive toxicity:**

2-butanone  
 TCLo(ihl, rat): 2900mg/m<sup>3</sup>(female 6-10 D preg); Specific Developmental Abnormalities - craniofacial(VCVGK\* -, 418, 1994)  
 Cyclohexanone  
 TCLo(ihl, rat): 105mg/m<sup>3</sup>/4h(1-20 D preg); Fertility - pre - implantation mortality(TPKVAL 14,26,1975)  
 TDLo(oral,mouse): 11mg/kg(8-12 D preg); Effects on Newborn - growth statistics(TCMUD8 6,361,1986)  
 Chrome III-Complex Dye  
 None known  
 Ethanol  
 TDLo(oral,woman): 250mg/kg(37 W preg); Effects on Embryo or Fetus - other effects to embryo(AJOGAH 145,251,1983)  
 TDLo(oral,rat): 22.5mg/kg(female 11-20 D preg); Specific Developmental Abnormalities - Central Nervous Systems(NETEEC 24, 719, 2002)  
 phenol  
 TDLo(oral,rat): 300mg/kg(6-15D preg); Fertility - post - implantation mortality(NTIS\*\* PB83-247726)

**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)  
 Cyclohexanone  
 None known  
 Chrome III-Complex Dye  
 None known  
 Ethanol  
 Human ihl, 5000ppm(9,4mg/L), respiratory tract irritation and confusion(ACGIH 2001)  
 phenol  
 Human, The influence of heart and blood: dyspnea, kidney trauma, convulsion, strong acidosis;(CERI, NITE hazard report, No.32,2005), Human, arrhythmia and pulsus

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infrequens(ATSDR 1998)

**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)

Cyclohexanone

None known

Chrome III-Complex Dye

None known

Ethanol

Not available

phenol

Human; The increasing of death rate by cardiovascular disease(CERI, NITE report No.32, 2005),Huma; Non-conjugation type new born high bilirubin blood disease(EHC 161, 2000)

**Aspiration hazard:**

2-butanone

Not available

Cyclohexanone

None known

Chrome III-Complex Dye

None known

Ethanol

Not available

phenol

Not available

**12 Ecological information**

**Ecotoxicity<sup>1)</sup>:**

2-butanone

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

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

Cyclohexanone

None known

Chrome III-Complex Dye

None known

Ethanol

daphnids(48h-LC50(g/L)):5463.9(ECETOC TR91 2003)

phenol

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

daphnids(48h-LC50(mg/L)):3.1(EU-RAR 2002)

**Persistence and degradability:**

2-butanone

Not available

Cyclohexanone

This material is biodegradable.

Chrome III-Complex Dye

None known

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Ethanol

This material is biodegradable.

phenol

This material is biodegradable.

**Bioaccumulative potential:**

2-butanone

Not available

Cyclohexanone

Not available

Chrome III-Complex Dye

None known

Ethanol

Not available

phenol

Not available

**Mobility in soil:**

2-butanone

Not available

Cyclohexanone

None known

Chrome III-Complex Dye

None known

Ethanol

Not available

phenol

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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