

# MATERIAL SAFETY DATA SHEET

## 1 IDENTIFICATION

Product name :JP-K05  
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

Classification of the substance or mixture :mixture  
Physico-chemical endpoints :Flammable liquid category 2  
Acute toxicity - oral :Category 5  
Acute toxicity - dermal :Category 3  
Acute toxicity - inhalation (vapors) :Category 4  
Acute toxicity - inhalation (dust, mist) :Not identified  
Skin corrosion/irritation :Category 2  
Eye damage/irritation :Category 2  
Sensitization - respiratory :Not identified  
Sensitization - skin :Not identified  
Germ cell mutagenicity :Category 1  
Carcinogenicity :Category 2  
Toxic to reproduction :Category 1  
Effects on or via lactation :Not identified  
Specific target organ systemic toxicity  
(Single exposure) :Category 1  
(Repeated exposure) :Category 1  
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: Flame, Exclamation mark, Health hazard

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

- Highly flammable liquid and vapour
- May be harmful if swallowed
- Harmful if inhaled Harmful if contact with skin
- Causes skin irritation
- Causes eye irritation
- May cause genetic defects
- Suspected of causing cancer
- May damage fertility or the unborn child
- 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.
- 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
Cyclohexanone	55-65	108-94-1
Ethanol	25-35	64-17-5
toluene	<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, CO<sub>2</sub>, 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.

**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)	
Cyclohexanone	:25(skin)
Ethanol	:1000
toluene	:20(skin)
ACGIH STEL(ppm)	
Cyclohexanone	:None known
Ethanol	:No data
toluene	:No data

## 9 Physical and chemical properties

Appearance	
Physical state	:Liquid
Color	:Black
Odor	:Solvent odor
Boiling point	: 78
Flash point	:21.3
Upper/lower flammability or explosive limits	:Lower 1.1 vol%, Upper 19 vol%
Vapor pressure	: 5866Pa (20 )
Relative density (Air = 1)	:None known
Relative density	:0.880 ± 0.1 (20 )
Solubility (Water)	:None known
Partition coefficient: n-octanol/water	:None known
Auto-ignition temperature	:370
Decomposition temperature	:No measurement

## 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

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**Acute toxicity;**

Cyclohexanone

LD50(oral, rat): 1800mg/kg

LD50(skin, rabbit): 1mL/kg

TCLo(oral, rat): 512mg/kg

Ethanol

Not available: Oral 6.2 ~ 17.8 (Rat LD50 (g/kg))

Not identified: Dermal No data

Not available: Inhalation 31600 (Vaper) (Rat LC50(ppm/4h))

toluene

Category 5: Oral 636 (Rat LD50(mg/kg))

Not available: Dermal 14100 (Rabbit LD50( $\mu$ L/kg))Not available: Inhalation 49 (Rat LC50(gm/m<sup>3</sup>/4H))**Skin corrosion/irritation;**

Cyclohexanone

TCLo(inhalation, human): 0.09mg/m<sup>3</sup>

Ethanol

Not identified

toluene

Category 2: Skin; rabbit; 20mg/24H; Moderate(85JCAE -, 29, 1986)

**Serious eye damage/irritation;**

Cyclohexanone

Eye; rabbit; 250?g/24H; Severe(85JCAE -, 289, 1986)

Ethanol

Category 2A

toluene

Category 2B: rabbit; ; Moderate(EU-RAR No.30, 2003)

**Respiratory or skin sensitization;**

Cyclohexanone

Skin; rabbit; 500mg; Mild; Open(UCDS\*\*)

Skin; human; 50%/48H; Mild(ADVEA4 27, 189, 1992)

Ethanol

Not identified

toluene

Not available

**Germ cell mutagenicity;**

Cyclohexanone

Mutation in microorganisms; S.typhimurium; cells; 20?L/L(EJMBA2 18,213,1983)

Cytogenetic analysis; human; lymphocyte; 5?g/L(GISAAA 46(5), 76, 1981)

Mutation in mammalian somatic cells; hamster; ovary; 7500?L/L(ENMUDM 7(Suppl 3), 60, 1985)

Ethanol

Category 1B

toluene

Not available: Micronucleus test; mouse; ipr; 433?g/kg/24H(ARTODN 58, 106, 1985)

Sister chromatid exchange; human; ihl; 252?g/L/19Y(MUREAV 519, 171, 2002)

**Carcinogenicity;**

Cyclohexanone

None known

Ethanol

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Not available Oral 6.2 ~ 17.8 (Rat LD50 (g/kg))

toluene

Not available:TDLo(oral,rat): 16mL/kg(6-21 D preg); Effects on Newborn - physical(REPEBL 47, 362, 2000)

TCLo(ihl,rat): 1800ppm(7-20 D preg); Specific Developmental Abnormalities - Central Nervous System(ARTODN 75, 103, 2001)

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)

#### **Reproductive toxicity;**

Cyclohexanone

None known

Ethanol

Category 1A

toluene

Category 1A

#### **STOST-single exposure;**

Cyclohexanone

None known

Ethanol

Category 3(Respiratory)

toluene

Category 1(Central nervous system),Category 3(Respiratory system,Anesthetizing action) 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 abnormality(CERI hazard sheet, 96-4,1997)

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

#### **STOST-repeated exposure;**

Cyclohexanone

None known

Ethanol

Category 1(Liver) 2(Nervous system)

toluene

Category 1(Central nervous system,Kidney,Liver) 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.**

Cyclohexanone

None known

Ethanol

Not identified

toluene

Not available

LD50 (50% Lethal Dose), LC50 (50% Lethal Concentration)

## **12 Ecological information**

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**Toxicity:**

Cyclohexanone  
None known:None known  
Ethanol  
trout 24h-LC50(g/L):11.2  
Carp 96h-LC50(g/L):18 ~ 13.4  
Creek Chub 24h-C50(g/L):7  
Guppy 7d-LC50(g/L):11  
toluene  
orange-red killifish 96h-LC50(mg/L):25  
dephnids 48h-EC50(mg/L):4.1

**Persistence and degradability:**

Cyclohexanone  
This material is biodegradable.  
Ethanol  
None known  
toluene  
This material is biodegradable.

**Bioaccumulative potential:**

Cyclohexanone  
:Not available  
Ethanol  
None known  
toluene  
None known

**Mobility in soil:**

Cyclohexanone  
None known  
Ethanol  
None known  
toluene  
None known

**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.  
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

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## 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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