

# MATERIAL SAFETY DATA SHEET

## 1 IDENTIFICATION

Product name :JP-K106  
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 identified  
Skin corrosion/irritation : Not available  
Eye damage/irritation : Category 2  
Sensitization - respiratory : Not identified  
Sensitization - skin : Not identified  
Germ cell mutagenicity : Not available  
Carcinogenicity : Category 2  
Toxic to reproduction : Not available  
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 system  
:(Repeated exposure)  
Category 1 Systemic toxicity  
Category 1 Central nervous system  
Category 1 Lungs  
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 vapour
- May be harmful if swallowed
- May be harmful if swallowed
- May be harmful if inhaled
- Causes skin irritation
- Causes serious eye irritation
- Causes damage to central nervous system-single exposure
- May cause damage to kidney-single exposure
- May cause respiratory irritation-single exposure
- Causes damage to Systemic toxicity, central Central nervous system, Lungs 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, 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.

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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	70-80	78-93-3
4-Methyl-2-pentanone	0-10	108-10-1
Carbon black	0-10	1333-86-4

**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 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;**

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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 ) place.  
Keep away from combustible materials and sources of ignition.

## 8 Exposure controls/personal protection

### Exposure guidelines;

ACGIH TLV-TWA (ppm)	
2-butanone	:200
4-Methyl-2-pentanone	:50
Carbon black	:3.5mg/cm <sup>3</sup>
ACGIH STEL(ppm)	
2-butanone	:300
4-Methyl-2-pentanone	:75
Carbon black	:None known

## 9 Physical and chemical properties

Appearance	
Physical state	:Liquid
Color	:Black
Odor	:Solvent odor
Boiling point	:80 (2-butanone)
Flash point	:-5.3 (closed cup)
Upper/lower flammability or explosive limits	:Lower 1.8 vol%, Upper 11.5 vol% (2-butanone)
Vapor pressure	:10.5kPa (20 ) (2-butanone)
Vapor density (Air = 1)	:2.41 (2-butanone)
Relative density	:0.86(20 )
Solubility (Water)	:29g/100mL (20 )(2-butanone)
Partition coefficient: n-octanol/water	:0.29 (2-butanone)
Auto-ignition temperature	:505 (2-butanone)
Decomposition temperature	:No data

## 10 Stability and reactivity

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

#### 4-Methyl-2-pentanone

LD50(ori,rat): 2080mg/kg(UCDC\*\* 4/25/1958)

LD50(ori,rat): 4600mg/kg(VCVGK\* -, 426, 1994)

LC50(ihl,rat): 100gm/m<sup>3</sup>(NTIS\*\* OTS0535383)

LD50(ori,mouse): 2850mg/kg(VCVGK\* -, 426, 1994)

TCLo(ihl,human): 12mg/m<sup>3</sup>(GISAAA 5, 8, 1994)

LD50(ori,rat): 2919mg/kg(Calcul

#### Carbon black

None known

### Skin corrosion/irritation;

#### 2-butanone

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

#### 4-Methyl-2-pentanone

Skin; rabbit; 500mg/24H; Mild(85JCAE -, 284, 1986)

#### Carbon black

None known

### Serious eye damage/irritation;

#### 2-butanone

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

#### 4-Methyl-2-pentanone

Eye; rabbit; 40mg; Severe(UCDC\*\* 4/25/1958)

Eye; human; 200ppm/15H(JIHTAB 28, 262, 1946)

rabbit; No irritation(ECETOC TR48,1992: CERI Hazard data sheet, 2000: PATTY 4th, 1994)

#### Carbon black

None known

### Respiratory or skin sensitization;

#### 2-butanone

#### 4-Methyl-2-pentanone

Not available

#### Carbon black

None known

### Germ cell mutagenicity;

#### 2-butanone

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Reverse mutation assay in *S.typhimuriun* and *E.coli*; Negative  
 Sex chromosome loss and nondisjunction; *S.cerevisiae*; 33800ppm(MUREAV 149, 339, 1985)  
 4-Methyl-2-pentanone  
 Not available  
 Carbon black  
 None known

**Carcinogenicity;**

2-butanone  
 Not available  
 4-Methyl-2-pentanone  
 Not available  
 Carbon black  
 None known

**Reproductive toxicity;**

2-butanone  
 TCLo(ihl, rat): 2900mg/m<sup>3</sup>(female 6-10 D preg); Specific Developmental Abnormalities -  
 craniofacial(VCVGK\* -, 418, 1994)  
 4-Methyl-2-pentanone  
 TCLo(ihl, rat): 300ppm/6H(female 6-15 D preg)(FAATDF 8, 310, 1987)  
 Carbon black  
 None known

**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)  
 4-Methyl-2-pentanone  
 Human; ihl, The central nervous system symptom is admitted because of anesthetic actions such  
 as the respiratory tract irritation, the mucosa irritations, and the headache, the dizziness, and  
 the vomiturations. (CERI hazard data sheets, 2000: EHC 117, 1990: ACGIH 7th, 2001: DFGOT  
 vol.13, 1999: PATTY 4th, 1994: IRIS, 2003)  
 Animal; anesthetic action(IRIS, 2003: EHC 117, 1990: DFGOT vol.13, 1999: PATTY 4th, 1994)  
 Carbon black  
 None known

**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)  
 4-Methyl-2-pentanone  
 Human; repeated exposure, Various symptoms were admitted for which target organs such as  
 the feelings of weakness, the headache, the burning sensation in eye, the stomachache, nausea  
 and vomitings, and the sore throat were not able to be specified. (EHC 117, 1990: DFGOT vol.13,  
 1999: CERI Hazard data sheets, 2000)  
 Carbon black  
 None known

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 exist.

**Aspiration hazard.**

2-butanone  
Not available  
4-Methyl-2-pentanone  
Not available  
Carbon black  
None known

**12 Ecological information****Toxicity :**

2-butanone  
LD50(ori, rat): 2737mg/kg(TXAPA9 19, 699, 1971)  
LCLo(ihl, rat): 23500mg/m<sup>3</sup>/8H(AIHAAP 20, 364, 1959)  
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TCLo(ihl, human): 12mg/m<sup>3</sup>(GISAAA 5, 8, 1994)  
LD50(ori, rat): 2919mg/kg(Calcul  
Carbon black  
None known

**Persistence and degradability:**

2-butanone  
Not available  
4-Methyl-2-pentanone  
This material is biodegradable.  
Carbon black  
None known

**Bioaccumulative potential:**

2-butanone  
Not available  
4-Methyl-2-pentanone  
Not available  
Carbon black  
None known

**Mobility in soil:**

2-butanone  
Not available  
4-Methyl-2-pentanone  
Not available  
Carbon black  
None known

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### 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

### 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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