

MATERIAL SAFETY DATA SHEET

1 IDENTIFICATION

Product name	:JP-K62
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

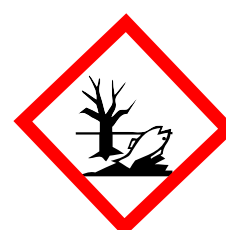
2 HAZARDS IDENTIFICATION

Classification of the substance or mixture	:mixture
Physico-chemical endpoints	:Flammable liquid category 2
Acute toxicity - oral	:Category 5
Acute toxicity - dermal	:Not identified
Acute toxicity - inhalation (vapors)	:Not available
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	:Not identified
Carcinogenicity	:Not identified
Toxic to reproduction	:Not identified
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	:Category 2
-Chronic hazard	:Category 2

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GHS label elements

Hazard symbols: Flame, Exclamation mark, Health hazard, Environment



Signal word: Danger

Hazard statement and precautionary statement:

- Highly flammable liquid and vapour
- May be harmful if swallowed
- Causes skin irritation
- Causes eye irritation
- Causes damage to organs-single exposure
- Causes damage to organs through prolonged or repeated exposure.
- May be harmful if swallowed and enters airways
- Toxic to aquatic life
- Toxic to aquatic life with long lasting effects

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	80-90	78-93-3
Chrome -Complex Dye	5-15	TSCA Registered
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, 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

Chrome -Complex Dye :None known

toluene :20(skin)

ACGIH STEL(ppm)

2-butanone :300

Chrome -Complex Dye :None known

toluene :No data

9 Physical and chemical properties

Appearance

Physical state :Liquid

Color :Black

Odor :Solvent odor

Boiling point : 79.6

Flash point :-4.3

Upper/lower flammability or explosive limits :Lower 1.8 vol%, Upper 11.5 vol% (2-butanone)

Vapor pressure : 9.453kPa (20)

Relative density (Air = 1) :2.41 (2-butanone)

Relative density :0.851 ± 0.05(20)

Solubility (Water) :29g/100mL (20)(2-butanone)

Partition coefficient: n-octanol/water :0.29 (2-butanone)

Auto-ignition temperature :404

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;

2-butanone

Category 5:Oral 5520(Rat LD50 (mg/kg))

Not available:Dermal > 8000(Rabbit LD50 (mg/kg))

Category 5:Inhalation 11700 (Vaper) (Rat LC50(ppm/4h))

Chrome -Complex Dye

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

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

Inhalation None known

toluene

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

Not available:Dermal 14100(RabbitLD50(μL/kg))

Not available:Inhalation 49(Rat LC50(gm/m3/4H))

Skin corrosion/irritation;

2-butanone

Category 2:Frequent/prolonged contact may irritate and cause dermatitis. Low order of toxicity.

Chrome -Complex Dye

No (Rabbit test-OECD404 1981)

toluene

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

Serious eye damage/irritation;

2-butanone

Category 2B:Eye contact:severely irritating. If not removed promptly, will injure eye tissue, which may result in permanent damage.

Chrome -Complex Dye

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

toluene

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

Respiratory or skin sensitization;

2-butanone

Not identified

Chrome -Complex Dye

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

toluene

Not available

Germ cell mutagenicity;

2-butanone

Not available

Chrome -Complex Dye

Not identified

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;

2-butanone

Not available

Chrome -Complex Dye

Not identified

toluene

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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;

2-butanone

Not available

Chrome -Complex Dye

Not identified

toluene

Category 1A

STOST-single exposure;

2-butanone

Category 1(Central nervous system),Category 2(Kidney),Category 3(Respiratory)

Chrome -Complex Dye

Not identified

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;

2-butanone

Category 1(Central nervous system,Peripheral nervous system)

Chrome -Complex Dye

None known

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.

2-butanone

Category 1 (Vapor concentrations above exposure)

Chrome -Complex Dye

None known

toluene

Not available

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

12 Ecological information

Toxicity:

2-butanone

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killifish 96h-LC50(mg/L):>100
 killifish 14d-LC50 (mg/L):100
 killifish 14d-NOEC (mg/L):100
 Chrome -Complex Dye
 Carp LC50 (mg/L):2
 Daphnia EC50 (mg/L):1000(Darp.Mag Straus 1820 test)
 toluene
 orange-red killifish 96h-LC50(mg/L):25
 dephnids 48h-EC50(mg/L):4.1

Persistence and degradability:

2-butanone
 None known
 Chrome -Complex Dye
 None known
 toluene
 This material is biodegradable.

Bioaccumulative potential:

2-butanone
 None known
 Chrome -Complex Dye
 None known
 toluene
 None known

Mobility in soil:

2-butanone
 None known
 Chrome -Complex Dye
 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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