

MATERIAL SAFETY DATA SHEET

1 IDENTIFICATION

Product name	:JP-K86
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

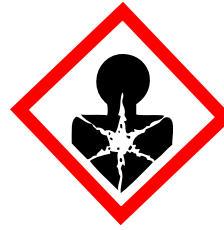
2 HAZARDS IDENTIFICATION

Classification of the substance or mixture	:mixture
Physico-chemical endpoints	:Flammable liquid category 2
Acute toxicity - oral	:Not available
Acute toxicity - dermal	:Not available
Acute toxicity - inhalation (vapors)	:Category 5
Acute toxicity - inhalation (dust, mist)	:Not identified
Skin corrosion/irritation	:Category 3
Eye damage/irritation	:Category 2
Sensitization - respiratory	:Not identified
Sensitization - skin	:Not available
Germ cell mutagenicity	:Not available
Carcinogenicity	:Not available
Toxic to reproduction	:Category 2
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, anesthetizing action
(Repeated exposure)	:Category 1 Central nervous system :Category 1 peripheral nervous system :Category 2 Blood
Aspiration toxicity	:Category 2
Hazardous to the aquatic environment	
-Acute hazard	:Not available
-Chronic hazard	:Not available

To the best of our knowledge, the information contained here in is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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 inhaled
- Causes mild skin irritation
- Causes eye irritation
- Suspected of damaging fertility or the unborn child
- Causes damage to central nervous system-single exposure
- May cause damage to kidney-single exposure
- May cause respiratory irritation and anesthetizing action-single exposure
- Causes damage to central nervous system, and peripheral nervous system through prolonged or repeated exposure.
- May cause damage to blood 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.

To the best of our knowledge, the information contained here in is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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
acetone	70-80	67-64-1
2-butanone	5-15	78-93-3
Chrome -Complex Dye	1-10	TSCA Registered

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.

To the best of our knowledge, the information contained here in is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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)	
acetone	:500(skin)
2-butanone	:200
Chrome -Complex Dye	:None known
ACGIH STEL(ppm)	
acetone	:750(skin)
2-butanone	:300
Chrome -Complex Dye	:None known

9 Physical and chemical properties

Appearance	
Physical state	:Liquid
Color	:black
Odor	:Solvent odor
Boiling point	:56.1 (acetone)
Flash point	:-20 (measured value)
Upper/lower flammability or explosive limits	:Lower 1.2 vol%, Upper 13 vol% (acetone)
Vapor pressure	:24.7kPa (20) (acetone)
Relative density (Air = 1)	:2.00 (acetone)
Relative density	:0.840 (20)
Solubility (Water)	:arbitrarily dissolve(acetone)
Partition coefficient: n-octanol/water	:0.24 (acetone)
Auto-ignition temperature	:538 (acetone)
Decomposition temperature	:No measurement

10 Stability and reactivity

Stability: The product is stable.

Conditions and materials to avoid: Not available

To the best of our knowledge, the information contained here in is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Hazardous decomposition products: These products are carbon oxides

11 Toxicological information

Acute toxicity;

acetone

Not available:Oral 5000 (Rabbit LD50 (mg/kg)) (SIDS(1999))(ACGIH(2001))

Not available:Dermal 5000(Rabbit LD50(mg/kg)) (SIDS(1999));(ACGIH(2001))

Not identified:Inhalation No data

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

Skin corrosion/irritation;

acetone

Skin; rabbit; 500mg/24H; Mild(85JCAE -,280,1986)

2-butanone

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

Chrome -Complex Dye

No (Rabbit test-OECD404 1981)

Serious eye damage/irritation;

acetone

Eye; rabbit; 20mg; Severe(AJOPAA 29,1363,1946) Eye; rabbit; 20mg/24H; Severe(85JCAE -,280,1986)

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)

Respiratory or skin sensitization;

acetone

Not available

2-butanone

Not identified

Chrome -Complex Dye

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

Germ cell mutagenicity;

acetone

Cytogenetic analysis; hamster; fibroblast; 40gm/l(FCTOD7 22,623,1984)

2-butanone

Not available

Chrome -Complex Dye

Not identified

Carcinogenicity;

acetone

Not available

To the best of our knowledge, the information contained here in is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

2-butanone

Not available

Chrome -Complex Dye

Not identified

Reproductive toxicity;

acetone

TDLo(ori, rat): 273gm/kg(13 W male)(NTIS** PB91-185975)

TCLo(ihl, mammal): 31500?g/m³/24H(1-13D preg); (GTPZAB 26(6), 24, 1982)

2-butanone

Not available

Chrome -Complex Dye

Not identified

STOST-single exposure;

acetone

Human, irritation of throat 12000ppm(ACGIH, 2001) ; Human irritation of throat, nose and trachea 1190mg/m³/6h(EHC 207, 1998); Human, irritation of throat 1000ppm/4h(EHC 207, 1998)

2-butanone

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

Chrome -Complex Dye

Not identified

STOST-repeated exposure;

acetone

The increase of white blood cell and eosinophile leukocyte(ACGIH, 2001)

2-butanone

Category 1(Central nervous system, Peripheral nervous system)

Chrome -Complex Dye

None known

Aspiration hazard.

acetone

Not available

2-butanone

Category 1 Vapor concentrations above exposure

Chrome -Complex Dye

None known

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

12 Ecological information

Toxicity:

acetone

LC50(Salmo gairdneri): mg/L/96hr (at 12 C= 54 F):5540

2-butanone

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)

Persistence and degradability:

To the best of our knowledge, the information contained here in is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

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

Bioaccumulative potential:

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

Mobility in soil:

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

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

To the best of our knowledge, the information contained here in is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.