

MATERIAL SAFETY DATA SHEET

1 IDENTIFICATION

Product name :JP-W93
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 available
Acute toxicity - inhalation (air) :Not identified
Acute toxicity - inhalation (vapors) :Category 5
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 available
Carcinogenicity :Not available
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 airway irritation
(Repeated exposure) :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: Flame, Exclamation mark, Health hazard



Signal word: Danger

Hazard statement and precautionary statement:

- Highly flammable liquid and vapour
- May be harmful if swallowed
- May be harmful if inhaled
- Causes skin irritation
- Causes eye irritation
- 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
- Causes damage to 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, 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.

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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	30-40	78-93-3
Ethyl Acetate	10-20	141-78-6
Titanium oxide	5-7	13463-67-7
Cellulose nitrate	1-10	9004-70-0
toluene	<0.3	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.

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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) place.

Keep away from combustible materials and sources of ignition.

8 Exposure controls/personal protection**Exposure guidelines;**

ACGIH TLV-TWA (ppm)

2-butanone	:200
Ethyl Acetate	:400
Titanium oxide	:10mg/m ³
Cellulose nitrate	:None known
toluene	:20(skin)

ACGIH STEL(ppm)

2-butanone	:300
Ethyl Acetate	:400
Titanium oxide	:None known
Cellulose nitrate	:None known
toluene	:No data

9 Physical and chemical properties

Appearance	
Physical state	:Liquid
Color	:white
Odor	:Solvent odor
Boiling point	:80 (2-butanone)
Flash point	:-5.4 (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)
Relative density (Air = 1)	:2.41 (2-butanone)
Relative density	:1.01 ± 0.05(20)
Solubility (Water)	:29g/100mL (20)(2-butanone)
Partition coefficient: n-octanol/water	:0.29 (2-butanone)
Auto-ignition temperature	:505 (2-butanone)

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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

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))

Ethyl Acetate

5000(Rat LD50(mg/kg))

18000(Rabbit LD50(mg/kg))

Not available (LC50: 57.6g/m3)

Titanium oxide

None known:Oral

None known:Dermal

None known:inhalation

Cellulose nitrate

>5000(Rat LD50(mg/kg))

None known

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.

Ethyl Acetate

Not available

Titanium oxide

Causes eye soft irritation

Cellulose nitrate

Not identified

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.

Ethyl Acetate

Category 2B

Titanium oxide

Causes eye soft irritation

Cellulose nitrate

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Not identified
toluene

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

Respiratory or skin sensitization;

2-butanone
Not identified
Ethyl Acetate
None known
Titanium oxide
Causes respiratory soft irritation
Cellulose nitrate
None known
toluene
Not available

Germ cell mutagenicity;

2-butanone
Not available
Ethyl Acetate
Not available
Titanium oxide
None known
Cellulose nitrate
None known
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
Ethyl Acetate
None known
Titanium oxide
None known
Cellulose nitrate
Not identified
toluene
Not available:TDLo(ori,rat): 16mL/kg(6-21 D preg); Effects on Newborn - phisycal(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
Ethyl Acetate
None known
Titanium oxide
None known
Cellulose nitrate

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None known
toluene
Category 1A
STOST-single exposure;
2-butanone
Category 1(Central nervous system),Category 2(Kidney),Category 3(Respiratory)
Ethyl Acetate
Category 1 (Respiratory system), Category 3 (anesthetizing action)
Titanium oxide
None known
Cellulose nitrate
Category 3
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)
Ethyl Acetate
None known
Titanium oxide
None known
Cellulose nitrate
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)
Ethyl Acetate
None known
Titanium oxide
None known
Cellulose nitrate
None known
toluene
Not available

12 Ecological information

Toxicity:

2-butanone
killifish 96h-LC50(mg/L):>100

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killifish 14d-LC50 (mg/L):100

killifish 14d-NOEC (mg/L):100

Ethyl Acetate

Not available

Titanium oxide

None known

Cellulose nitrate

None known

toluene

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

dephnids 48h-EC50(mg/L):4.1

Persistence and degradability:

2-butanone

None known

Ethyl Acetate

None known

Titanium oxide

None known

Cellulose nitrate

None known

toluene

This material is biodegradable.

Bioaccumulative potential:

2-butanone

None known

Ethyl Acetate

None known

Titanium oxide

None known

Cellulose nitrate

None known

toluene

None known

Mobility in soil:

2-butanone

None known

Ethyl Acetate

None known

Titanium oxide

None known

Cellulose nitrate

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

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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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