

# MATERIAL SAFETY DATA SHEET

## 1 IDENTIFICATION

Product name :TH-TYPE B  
 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                                      | :Not available  |
| Acute toxicity - inhalation (air)                            | :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 available  |
| Carcinogenicity  | :Not available  |
| Toxic to reproduction  | :Category 1   |
| Effects on or via lactation                                  | :Not identified   |
| Specific target organ systemic toxicity<br>(Single exposure) | :Category 1 Sensory system<br>:Category 1 Systemic toxicity<br>:Category 1 Central nervous system<br>:Category 2 Kidney<br>:Category 3 Respiratory system, anesthetizing action |
| (Repeated exposure)  | :Category 1 Sensory system<br>:Category 1 Central nervous system<br>:Category 1 Peripheral nervous system<br>:Category 2  |
| 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
- Causes skin irritation
- Causes eye irritation
- May damage fertility or the unborn child
- Causes damage to Sensory system, systemic toxicity and central nervous system-single exposure
- May cause damage to kidney-single exposure
- May cause respiratory irritation, drowsiness or dizziness-single exposure
- Causes damage to sensory system, central nervous system 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 spray (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    | 80-90             | 78-93-3    |
| Methanol      | 10-20             | 67-56-1    |

### 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;**

Fire fighters should wear boots, overalls, gloves, eye and face protection and breathing apparatus.

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## 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       |
| Methanol            | :200(skin) |
| ACGIH STEL(ppm)     |            |
| 2-butanone          | :300       |
| Methanol            | :250(skin) |

## 9 Physical and chemical properties

|  |   |
|--|---|
| Appearance                                   |   |
| Physical state                               | :Liquid                                       |
| Color  | :Clear  |
| Odor   | :Solvent odor                                 |
| Boiling point                                | :80 (2-butanone)                              |
| Flash point                                  | :-4.5 (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                             | :0.81(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 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 &gt; 8000(Rabbit LD50 (mg/kg))

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

Methanol

Category 5:Oral 6200(Rat LD50(mg/kg))

Not available:Dermal 15800(RabbitLD50(mg/kg))

Not available:Inhalation &gt;22500(Rat LC50(ppm/8H))

**Skin corrosion/irritation;**

2-butanone

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

Methanol

Not identified

**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.

Methanol

Category 2A

**Respiratory or skin sensitization;**

2-butanone

Not identified

Methanol

Not identified

**Germ cell mutagenicity;**

2-butanone

Not available

Methanol

Not available

**Carcinogenicity;**

2-butanone

Not available

Methanol

Not identified

**Reproductive toxicity;**

2-butanone

Not available

Methanol

Not identified

**STOST-single exposure;**

2-butanone

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

Methanol

Category 1(Central nervous system,Sensory system,systemic toxicity)

**STOST-repeated exposure;**

2-butanone

Category 1(Central nervous system,Peripheral nervous system)

Methanol

Category 1(Central nervous system,sensory system)

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**Aspiration hazard.**

2-butanone

Category 1 (Vapor concentrations above exposure)

Methanol

Not identified

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

2-butanone

killifish 96h-LC50(mg/L):&gt;100

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

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

Methanol

brine shrimp 24h-LC50(mg/L):900.73

**Persistence and degradability:**

2-butanone

None known

Methanol

None known

**Bioaccumulative potential:**

2-butanone

None known

Methanol

None known

**Mobility in soil:**

2-butanone

None known

Methanol

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&lt;100ppm Pb, Hg, Hexavalent Cr, PBB, PBDE&lt;1000ppm

**16 References**

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- 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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