

# MATERIAL SAFETY DATA SHEET

## 1 IDENTIFICATION

Product name :TH-60  
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	:Not available
Acute toxicity - dermal	:Category 5
Acute toxicity - inhalation (air)	:Not identified
Acute toxicity - inhalation (vapors)	:Not available
Acute toxicity - inhalation (dust, mist)	:Not available
Skin corrosion/irritation	:Category 3
Eye damage/irritation	:Category 2
Sensitization - respiratory	:Not identified
Sensitization - skin	:Not identified
Germ cell mutagenicity	:Category 1
Carcinogenicity	:Not available
Toxic to reproduction	:Category 1
Effects on or via lactation	:Not identified
Specific target organ systemic toxicity (Single exposure)	:Category 1 Kidney :Category 1 Systemic toxicity :Category 1 Central nervous system :Category 3 Respiratory system, anesthetizing action
(Repeated exposure)	:Category 1 liver :Category 2 Arterial system, nervous and spleen
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 in contact with skin-Dermal
- Causes mild skin irritation
- Causes eye irritation
- May cause bad effect to genetic or fetus
- May damage fertility or the unborn child
- Cause damage to ,Kidney, Systemic toxicity and Central nervous system-single exposure
- May cause respiratory irritation-single exposure
- Causes damage to liver-through prolonged or repeated exposure
- May causes damage to Arterial system,nervous and spleen-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
Ethanol	80-90	64-17-5
2-Propanol	5-10	67-63-0
2-Methyl-1-propanol	1-10	78-83-1

### 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)	
Ethanol	:1000
2-Propanol	:200
2-Methyl-1-propanol	:50
ACGIH STEL(ppm)	
Ethanol	:No data
2-Propanol	:4500
2-Methyl-1-propanol	:None known

## 9 Physical and chemical properties

Appearance	
Physical state	:Liquid
Color	:Clear
Odor	:Solvent odor
Boiling point	: 78.3 (ethanol)
Flash point	:16.0 (closed cup)
Upper/lower flammability or explosive limits	:Lower 4.3 vol%, Upper 19 vol%(ethanol)
Vapor pressure	: 5.9kPa(20 )(ethanol)
Relative density (Air = 1)	:1.59(ethanol)
Relative density	:0.81(20 )
Solubility (Water)	:water;infinite(ethanol)
Partition coefficient: n-octanol/water	:0.32(ethanol)
Auto-ignition temperature	:390 (ethanol)
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

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## 11 Toxicological information

### Acute toxicity;

Ethanol

Not available:Oral 6.2 ~ 17.8 (Rat LD50 (g/kg))

Not identified:Dermal No data

Not available:Inhalation 31600 (Vaper) (Rat LC50(ppm/4h))

2-Propanol

LD50(ori, rat): 5000mg/kg(VCVGK\* -, 97, 1984)

skin:No data

LC50(ihl, rat): 72600mg/m3(VCVGK\* -, 97, 1984)

2-Methyl-1-propanol

LD50(ori, rat): 2460mg/kg(AMIHBC 10,61,1954)

LD50(ori, mouse): 3500mg/kg(VCVGK\* -, 102, 1984)

LD50(skin, rabbit): 3400mg/kg(NPIRI\* 1,11,1974)

### Skin corrosion/irritation;

Ethanol

Not identified

2-Propanol

Skin; rabbit; 500mg; Mild(NTIS\*\* AD-A106-944)

2-Methyl-1-propanol

rabbit; 500mg/24H; Severe(ACGIH(7th, 2001))

### Serious eye damage/irritation;

Ethanol

Category 2A

2-Propanol

Eye; rabbit; 100mg/24H; Moderate(85JCAE -, 191, 1986)

2-Methyl-1-propanol

rabbit; 2mg; Severe(PATTY (4th, 1994); DFGOT vol 19(2003))

### Respiratory or skin sensitization;

Ethanol

Not identified

2-Propanol

Not available

2-Methyl-1-propanol

Not available

### Germ cell mutagenicity;

Ethanol

Category 1B

2-Propanol

Cytogenetic analysis; rat-inhalation; 1030?g/m3/16W-I(GTPZAB 25(7),33,1981)

2-Methyl-1-propanol

Mutation in microorganisms; E.coli; 25000ppm(ABMGAJ 23,843,1969)

### Carcinogenicity;

Ethanol

Not available Oral 6.2 ~ 17.8 (Rat LD50 (g/kg))

2-Propanol

Not available

2-Methyl-1-propanol

Not available

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**Reproductive toxicity;**

Ethanol

Category 1A

2-Propanol

TDLo(ori,rat): 8gm/kg(female 6-15 D preg)(RTOPDW 23,183,1996)

TCLo(ihl,rat): 3500ppm/7H(female 1-19 D preg)(FCTOD7 26,247,1988)

2-Methyl-1-propanol

Mutation in microorganisms; E.coli; 25000ppm(ABMGAJ 23,843,1969)

**STOST-single exposure;**

Ethanol

Category 3(Respiratory)

2-Propanol

Not available

2-Methyl-1-propanol

Irritation of human pharyngeal(EHC 65, 1987; PATTY 4th, 1994)

The lowering of startle response and hypoactivity by ihl,rat, 3000ppm/6H(SIDS, 2004)

**STOST-repeated exposure;**

Ethanol

Category 1(Liver) 2(Nervous system)

2-Propanol

Not available

2-Methyl-1-propanol

Not available

**Aspiration hazard.**

Ethanol

Not identified

2-Propanol

Not available

2-Methyl-1-propanol

Not available

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

Ethanol

trout 24h-LC50(g/L):11.2

Carp 96h-LC50 (g/L):18 ~ 13.4

Creek Chub 24h-C50(g/L):7

Guppy 7d-LC50(g/L):11

2-Propanol

LC50(guppies):7060/7days

2-Methyl-1-propanol

Not available

**Persistence and degradability:**

Ethanol

None known

2-Propanol

This material is biodegradable.

2-Methyl-1-propanol

This material is biodegradable.

**Bioaccumulative potential:**

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Ethanol  
None known  
2-Propanol  
Not available  
2-Methyl-1-propanol  
Not available

**Mobility in soil:**

Ethanol  
None known  
2-Propanol  
Not available  
2-Methyl-1-propanol  
Not available

**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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