

**Safety Data Sheet**  
acc. to OSHA HCS

Printing date 03/31/2020

Reviewed on 03/31/2020

**1 Identification**

- **Product identifier**
- **Trade name:** *Solvent 40*
- **Application of the substance / the mixture** *Solvent for printing ink*
- **Details of the supplier of the safety data sheet**
- **Manufacturer/Supplier:**  
*Kayaku Advanced Materials, Inc.*  
*200 Flanders Road*  
*Westborough, MA 01581*  
*Tel: (617) 965-5511*  
*Fax: (617) 965-5818*
- **Information department:**  
*Product Safety*  
*Email: [productsafety@kayakuAM.com](mailto:productsafety@kayakuAM.com)*
- **Emergency telephone number:**  
*Kayaku Advanced Materials : 617-965-5511*  
*Chemtrec USA Emergency : 800-424-9300*  
*Chemtrec International Emergency : 703-527-3887*

**2 Hazard(s) identification**

- **Classification of the substance or mixture**



GHS05 Corrosion

*Eye Dam. 1 H318 Causes serious eye damage.*

GHS07

*Acute Tox. 4 H332 Harmful if inhaled.**STOT SE 3 H336 May cause drowsiness or dizziness.**Flam. Liq. 4 H227 Combustible liquid.*

- **Label elements**
- **GHS label elements** *The product is classified and labeled according to the Globally Harmonized System (GHS).*
- **Hazard pictograms**



GHS05 GHS07

- **Signal word** *Danger*
- **Hazard-determining components of labeling:**  
*gamma-Butyrolactone*
- **Hazard statements**  
*H227 Combustible liquid.*  
*H332 Harmful if inhaled.*  
*H318 Causes serious eye damage.*

(Contd. on page 2)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2020

Reviewed on 03/31/2020

**Trade name: Solvent 40**

(Contd. of page 1)

H336 May cause drowsiness or dizziness.

**Precautionary statements**

- P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
- P261 Avoid breathing dust/fume/gas/mist/vapors/spray
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P301+P310 If swallowed: Immediately call a poison center/doctor.
- P302+P352 If on skin: Wash with plenty of soap and water.
- P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.
- P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P333+P313 If skin irritation or rash occurs: Get medical advice/attention.
- P337+P313 If eye irritation persists: Get medical advice/attention.
- P370+P378 In case of fire: Use to extinguish: Alcohol resistant foam, Fire-extinguishing powder, Carbon dioxide.
- P403+P235 Store in a well-ventilated place. Keep cool.
- P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**Classification system:**
**NFPA ratings (scale 0 - 4)**

**HMIS-ratings (scale 0 - 4)**

**Other hazards**
**Results of PBT and vPvB assessment**

- **PBT:** Not applicable.
- **vPvB:** Not applicable.

### 3 Composition/information on ingredients

**Chemical characterization: Mixtures**

 · **Description:** Mixture of the substances listed below with nonhazardous additions.

**Dangerous components:**

96-48-0	gamma-Butyrolactone	Eye Dam. 1, H318; Acute Tox. 4, H302; STOT SE 3, H336	40-60%
106-65-0	Dimethyl succinate	Flam. Liq. 4, H227	5-15%
627-93-0	Dimethyl adipate	Aquatic Acute 3, H402	5-15%

**Additional Components:**

1119-40-0	Dimethyl glutarate	40-60%
-----------	--------------------	--------

(Contd. on page 3)

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 03/31/2020

Reviewed on 03/31/2020

**Trade name: Solvent 40**

(Contd. of page 2)

**4 First-aid measures****· Description of first aid measures****· General information:***Immediately remove any clothing soiled by the product.**Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.***· After inhalation:** *Supply fresh air; consult doctor in case of complaints.***· After skin contact:** *Immediately wash with water and soap and rinse thoroughly.***· After eye contact:***Wash eyes immediately with a large amount of water or normal saline, occasionally lifting upper and lower eye lids until no evidence of chemical remains (about 20 minutes). Remove contact lenses if present and easy to remove. Seek immediate medical attention.***· After swallowing:** *Do not induce vomiting; immediately call a doctor.***· Information for doctor:****· Most important symptoms and effects, both acute and delayed** *No further relevant information available.***· Indication of any immediate medical attention and special treatment needed** *Treat symptomatically.***5 Fire-fighting measures****· Extinguishing media****· Suitable extinguishing agents:***Alcohol resistant foam**Fire-extinguishing powder**ABC powder***· For safety reasons unsuitable extinguishing agents:** *Water with full jet***· Special hazards arising from the substance or mixture** *No further relevant information available.***· Advice for firefighters****· Protective equipment:** *Wear SCBA.***6 Accidental release measures****· Personal precautions, protective equipment and emergency procedures***Wear protective equipment. Keep unprotected persons away.**Ensure adequate ventilation**Keep away from ignition sources***· Environmental precautions:** *Do not allow to enter sewers/ surface or ground water.***· Methods and material for containment and cleaning up:***Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).**Ensure adequate ventilation.***· Reference to other sections***See Section 7 for information on safe handling.**See Section 8 for information on personal protection equipment.**See Section 13 for disposal information.*

(Contd. on page 4)

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 03/31/2020

Reviewed on 03/31/2020

**Trade name: Solvent 40**

(Contd. of page 3)

**7 Handling and storage**

- **Handling:**
- **Precautions for safe handling**  
Ensure good ventilation/exhaust at the workplace.  
Prevent formation of aerosols.
- **Information about protection against explosions and fires:**  
Keep ignition sources away - Do not smoke.  
Protect against electrostatic charges.
- **Conditions for safe storage, including any incompatibilities**
- **Storage:**
- **Requirements to be met by storerooms and containers:** No special requirements.
- **Information about storage in one common storage facility:**  
Do not store together with alkalis (caustic solutions).  
Do not store together with oxidizing and acidic materials.
- **Further information about storage conditions:**  
Keep container well-sealed in cool, dry location.  
Protect from heat and direct sunlight.  
Store receptacle in a well ventilated area.
- **Specific end use(s)** No further relevant information available.

**8 Exposure controls/personal protection**

- **Additional information about design of technical systems:** No further data; see item 7.
- **Control parameters**
- **Components with limit values that require monitoring at the workplace:**  
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists that were valid during the creation were used as basis.
- **Exposure controls**
- **Personal protective equipment:**
- **General protective and hygienic measures:**  
Keep away from food and beverages.  
Immediately remove all soiled and contaminated clothing.  
Wash hands before breaks and at the end of work.  
Avoid contact with the eyes.  
Avoid contact with the eyes and skin.
- **Respiratory equipment:**  
In case of low exposure, use cartridge respirator. In case of intensive or longer exposure, use SCBA.
- **Protection of hands:**



Protective gloves

- The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.
- **Material of gloves** Nitrile rubber, NBR
  - **Penetration time of glove material** Contact glove manufacture for break-through time.

(Contd. on page 5)

Printing date 03/31/2020

Reviewed on 03/31/2020

**Trade name: Solvent 40**

(Contd. of page 4)

 · **Eye protection:**


Tightly sealed goggles

## 9 Physical and chemical properties

 · **Information on basic physical and chemical properties**

 · **General Information**

 · **Appearance:**

· <b>Form:</b>	Liquid
· <b>Color:</b>	Colorless
· <b>Odor:</b>	Mild
· <b>Odor threshold:</b>	Not determined.

 · **pH-value:** Not determined.

 · **Change in condition**

· <b>Melting point/Melting range:</b>	Undetermined.
· <b>Boiling point/Boiling range:</b>	96 °C (204.8 °F)

 · **Flash point:** 90 °C (194 °F)

 · **Flammability (solid, gaseous):** Not applicable.

 · **Decomposition temperature:** Not determined.

 · **Auto igniting:** Product is not selfigniting.

 · **Danger of explosion:** Not determined.

 · **Explosion limits:**

· <b>Lower:</b>	Not determined.
· <b>Upper:</b>	Not determined.

 · **Vapor pressure at 20 °C (68 °F):** 8.3 hPa (6.2 mm Hg)

 · **Density at 20 °C (68 °F):** 1.1057 g/cm<sup>3</sup> (9.22707 lbs/gal)

 · **Relative density** Not determined.

 · **Vapor density** Not determined.

 · **Evaporation rate** 1.6-2.3 (BuAc=1)

 · **Solubility in / Miscibility with**

 · **Water:** Water miscible No

 · **Partition coefficient (n-octanol/water):** Not determined.

 · **Viscosity:**

· <b>Dynamic:</b>	Not determined.
· <b>Kinematic:</b>	Not determined.

 · **Solvent content:**

· <b>Organic solvents:</b>	42.0 %
· <b>VOC content:</b>	42.0 %

(Contd. on page 6)

Printing date 03/31/2020

Reviewed on 03/31/2020

**Trade name: Solvent 40**

(Contd. of page 5)

 · **Other information**

No further relevant information available.

## 10 Stability and reactivity

- **Reactivity** No further relevant information available.
- **Chemical stability** Stable
- **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
- **Possibility of hazardous reactions** No dangerous reactions known.
- **Conditions to avoid**  
 Heat, flames and sparks. Extremes of temperature and direct sunlight.  
 Contact with incompatible materials.
- **Incompatible materials:** Strong Oxidizing Agents, Strong Acids, Strong Bases
- **Hazardous decomposition products:** Carbon monoxide and carbon dioxide

## 11 Toxicological information

- **Information on toxicological effects**
- **Acute toxicity:**

 · **LD/LC50 values that are relevant for classification:**
**96-48-0 gamma-Butyrolactone**

Oral	LD50	1540 mg/kg (Rat)
Dermal	LD50	5000 mg/kg (gui)
Inhalative	LC50/4 h	>5.1 mg/l (Rat)

- **Primary irritant effect:**
- **on the skin:** No irritant effect.
- **on the eye:** Irritating effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**  
 The product shows the following dangers according to internally approved calculation methods for preparations:  
 Harmful  
 Irritant

 · **Carcinogenic categories**

 · **IARC (International Agency for Research on Cancer)**

96-48-0 gamma-Butyrolactone

3

 · **NTP (National Toxicology Program)**

None of the ingredients are listed.

 · **OSHA-Ca (Occupational Safety & Health Administration)**

None of the ingredients are listed.

(Contd. on page 7)

Printing date 03/31/2020

Reviewed on 03/31/2020

**Trade name: Solvent 40**

(Contd. of page 6)

## 12 Ecological information

· **Toxicity**

· **Aquatic toxicity:**

**96-48-0 gamma-Butyrolactone**

LC50/96 h > 220 - < 460 mg/l (golden orfe)

EC50/48 h > 500 mg/l (daphnia magna)

EC50/72 h 360 mg/l (green algae)

EC50/17 h > 10000 mg/l (bacterium)

· **Persistence and degradability** No further relevant information available.

· **Behavior in environmental systems:**

· **Bioaccumulative potential** No further relevant information available.

· **Mobility in soil** No further relevant information available.

· **Additional ecological information:**

· **General notes:**

Water hazard class 1 (Self-assessment): slightly hazardous for water

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

· **Results of PBT and vPvB assessment**

· **PBT:** Not applicable.

· **vPvB:** Not applicable.

· **Other adverse effects** No further relevant information available.

## 13 Disposal considerations

· **Waste treatment methods**

· **Recommendation:**

Must not be disposed of as regular garbage/trash. Do not allow product to reach sewage system.

Disposal must be made in accordance with Federal, State, and Local regulations.

· **Uncleaned packagings:**

· **Recommendation:** Disposal must be made in accordance with Federal, State, and Local regulations.

## 14 Transport information

· **UN-Number**

· **DOT, ADR, ADN, IMDG, IATA** Not Regulated

· **UN proper shipping name**

· **DOT, ADR, ADN, IMDG, IATA** Not Regulated

· **Transport hazard class(es)**

· **DOT, ADR, ADN, IMDG, IATA**

· **Class** Not Regulated

· **Packing group**

· **DOT, ADR, IMDG, IATA** Not Regulated

· **Environmental hazards:**

Not applicable.

(Contd. on page 8)

Printing date 03/31/2020

Reviewed on 03/31/2020

**Trade name: Solvent 40**

(Contd. of page 7)

 · **Special precautions for user** Not applicable.

 · **Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** Not applicable.

 · **UN "Model Regulation":** Not Regulated

## 15 Regulatory information

 · **Safety, health and environmental regulations/legislation specific for the substance or mixture**

 · **Sara**

 · **Section 355 (extremely hazardous substances):**

None of the ingredients are listed.

 · **Section 313 (Specific toxic chemical listings):**

None of the ingredients is listed.

 · **TSCA (Toxic Substances Control Act):** All ingredients are listed or comply with TSCA regulations.

 · **Proposition 65**

 · **Chemicals known to cause cancer:**

None of the ingredients are listed.

 · **Chemicals known to cause reproductive toxicity for females:**

None of the ingredients are listed.

 · **Chemicals known to cause reproductive toxicity for males:**

None of the ingredients are listed.

 · **Chemicals known to cause developmental toxicity:**

None of the ingredients are listed.

 · **Carcinogenic categories**

 · **EPA (Environmental Protection Agency)**

None of the ingredients are listed.

 · **TLV (Threshold Limit Value established by ACGIH)**

None of the ingredients are listed.

 · **NIOSH-Ca (National Institute for Occupational Safety and Health)**

None of the ingredients are listed.

 · **New Jersey State Right To Know List**

96-48-0 gamma-Butyrolactone

1119-40-0 Dimethyl glutarate

627-93-0 Dimethyl adipate

 · **Pennsylvania Hazardous Substances List**

96-48-0 gamma-Butyrolactone

1119-40-0 Dimethyl glutarate

627-93-0 Dimethyl adipate

 · **California SCAQMD Rule 443.1 VOC's:** No information available.

 · **GHS label elements** The product is classified and labeled according to the Globally Harmonized System (GHS).

(Contd. on page 9)

## Safety Data Sheet

acc. to OSHA HCS

Printing date 03/31/2020

Reviewed on 03/31/2020

**Trade name: Solvent 40**

(Contd. of page 8)

**· Hazard pictograms**


GHS05 GHS07

**· Signal word Danger**
**· Hazard-determining components of labeling:**

gamma-Butyrolactone

**· Hazard statements**

H227 Combustible liquid.

H332 Harmful if inhaled.

H318 Causes serious eye damage.

H336 May cause drowsiness or dizziness.

**· Precautionary statements**

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

P261 Avoid breathing dust/fume/gas/mist/vapors/spray

P280 Wear protective gloves/protective clothing/eye protection/face protection.

P301+P310 If swallowed: Immediately call a poison center/doctor.

P302+P352 If on skin: Wash with plenty of soap and water.

P304+P341 If inhaled: If breathing is difficult, remove person to fresh air and keep comfortable for breathing.

P305+P351+P338 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P333+P313 If skin irritation or rash occurs: Get medical advice/attention.

P337+P313 If eye irritation persists: Get medical advice/attention.

P370+P378 In case of fire: Use to extinguish: Alcohol resistant foam, Fire-extinguishing powder, Carbon dioxide.

P403+P235 Store in a well-ventilated place. Keep cool.

P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

**· Chemical safety assessment: A Chemical Safety Assessment has not been carried out.**

### 16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

**· Department issuing SDS: Product safety department**
**· Contact: Tom Cole, EHS Manager (tcole@kayakuAM.com)**
**· Revision History: The manufacturer's information in Section 1 has been updated.**
**· Date of preparation / last revision 03/31/2020 / 1**
**· Abbreviations and acronyms:**

ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)

IMDG: International Maritime Code for Dangerous Goods

DOT: US Department of Transportation

IATA: International Air Transport Association

ACGIH: American Conference of Governmental Industrial Hygienists

EINECS: European Inventory of Existing Commercial Chemical Substances

ELINCS: European List of Notified Chemical Substances

CAS: Chemical Abstracts Service (division of the American Chemical Society)

(Contd. on page 10)

**Safety Data Sheet**  
**acc. to OSHA HCS**

Printing date 03/31/2020

Reviewed on 03/31/2020

**Trade name: Solvent 40**

(Contd. of page 9)

NFPA: National Fire Protection Association (USA)  
HMIS: Hazardous Materials Identification System (USA)  
VOC: Volatile Organic Compounds (USA, EU)  
LC50: Lethal concentration, 50 percent  
LD50: Lethal dose, 50 percent  
PBT: Persistent, Bioaccumulative and Toxic  
vPvB: very Persistent and very Bioaccumulative  
NIOSH: National Institute for Occupational Safety  
OSHA: Occupational Safety & Health  
TLV: Threshold Limit Value  
PEL: Permissible Exposure Limit  
REL: Recommended Exposure Limit  
Flam. Liq. 4: Flammable liquids – Category 4  
Acute Tox. 4: Acute toxicity – Category 4  
Eye Dam. 1: Serious eye damage/eye irritation – Category 1  
STOT SE 3: Specific target organ toxicity (single exposure) – Category 3  
Aquatic Acute 3: Hazardous to the aquatic environment - acute aquatic hazard – Category 3

US