1. Identification of the substance/mixture and of the company/undertaking

Product identifier:
- Product name: Glycidyl methacrylate
- SDS No.: 3458E–2

Details of the supplier of the safety data sheet
- Manufacturer/Supplier: KISHIDA CHEMICAL CO., LTD.
- Address: 3–1, Honmachibashi, Chuo–ku, Osaka , JAPAN
- Division: Safety Management Dept. of Chemicals
- Telephone number: +81–6–6946–8061
- FAX: +81–6–6946–1607
- e-mail address: kagakuhinanzenkanri@kishida.co.jp

2. Hazards identification

GHS classification and label elements of the product

Classification of the substance or mixture

PHYSICAL AND CHEMICAL HAZARDS
- Flammable liquids: Category 4

HEALTH HAZARDS
- Acute toxicity (Oral): Category 4
- Acute toxicity (Dermal): Category 3
- Skin corrosion/irritation: Category 1
- Serious eye damage/eye irritation: Category 1
- Skin sensitization: Category 1
- Germ cell mutagenicity: Category 2
- Carcinogenicity: Category 1B
- Reproductive toxicity: Category 2
- Specific target organ toxicity – single exposure: Category 1 (respiratory apparatus)
- Specific target organ toxicity – repeated exposure: Category 1 (respiratory apparatus)

ENVIRONMENT HAZARDS
- Hazardous to the aquatic environment (Acute): Category 2
- Hazardous to the aquatic environment (Long–term): Category 3

(Note) GHS classification without description: Not classified/Classification not possible

Label elements

Signal word: Danger

HAZARD STATEMENT
- Combustible liquid
- Harmful if swallowed
- Toxic in contact with skin
- Causes severe skin burns and eye damage
- Causes serious eye damage
- May cause an allergic skin reaction
- Suspected of causing genetic defects
- May cause cancer
- Suspected of damaging fertility or the unborn child
Causes damage to organs after single exposure (respiratory apparatus)
Causes damage to organs through prolonged or repeated exposure (respiratory apparatus)
Toxic to aquatic life
Harmful to aquatic life with long lasting effects

PRECAUTIONARY STATEMENT

Prevention
Avoid release to the environment.
Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
Do not breathe dust/fume/gas/mist/vapors/spray.
Wash contaminated parts thoroughly after handling.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
Do not eat, drink or smoke when using this product.

Response
In case of fire: Use appropriate media other than water for extinction.
Get medical advice/attention if you feel unwell.
If exposed or concerned: Get medical advice/attention.
If INHALED: Remove person to fresh air and keep comfortable for breathing.
If ON SKIN: Wash with plenty of soap and water.
If ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
If skin irritation or rash occurs: Get medical advice/attention.
Take off immediately all contaminated clothing and wash it before reuse.
If IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
If SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Storage
Store in a well-ventilated place.

Disposal
Dispose of contents/container in accordance with local/national regulation.

Specific Physical and Chemical hazards
Heating may cause fire.

3. Composition/information on ingredients
Mixture/Substance selection:

Substance
Ingredient name: Glycidyl methacrylate
Content (%): 96 (min)
Chemical formula: CH₂:C(CH₃)COOC₃H₅O
Chemicals No. Japan: 2-1041
CAS No.: 106-91-2
MW: 142.15
ECNO: 203-441-9

Note: The figures shown above are not the specifications of the product.

Stabilizing additives
4-Methoxyphenol (p-) (CAS No. 150-76-5)
4. First-aid measures

Descriptions of first-aid measures

General measures
Get medical attention/advice if you feel unwell.

IF INHALED
Remove person to fresh air and keep comfortable for breathing.
Call a POISON CENTER or doctor/physician if you feel unwell.

IF ON SKIN (or hair)
Take off immediately all contaminated clothing. Rinse skin with water/shower.
Wash with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.

IF IN EYES
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy
to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

IF SWALLOWED
Rinse mouth. Do NOT induce vomiting.
Call a POISON CENTER or doctor/physician if you feel unwell.

5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media
In case of fire, use foam, dry powder, CO2 to extinguish.

Unsuitable extinguishing media
Indoor firefighting equipment or outdoor firefighting equipment
Sprinkler equipment
Dry-powder firefighting equipment – except for phosphate etc., hydrogen carbonate etc.
Straight stream water extinguisher
Water mist extinguisher
Reinforcing liquid jet extinguisher
Dry-powder extinguisher – except for phosphate etc., hydrogen carbonate etc.
Bucket of water or tank of water

Specific hazards arising from the substance or mixture
Containers may explode when heated.
Fire may produce irritating, corrosive and/or toxic gases.

Advice for firefighters
Specific fire-fighting measures
Evacuate non-essential personnel to safe area.

Special protective equipment and precautions for fire-fighters
Wear fire/flame resistant/retardant clothing.
Wear protective gloves/protective clothing/eye protection/face protection.
Firefighters should wear self-contained breathing apparatus with full face piece operated
positive pressure mode.

6. Accidental release measures

Personnel precautions, protective equipment and emergency procedures
Ventilate area until material pick up is complete.
Wear proper protective equipment.

Environmental precautions
Prevent spills from entering sewers, watercourses or low areas.

Methods and materials for containment and cleaning up
Absorb spill with inert material (dry sand, earth, et al), then place in a chemical waste container.

Preventive measures for secondary accident
Collect spillage.

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7. Handling and storage
   Precautions for safe handling
   Preventive measures
   (Exposure Control for handling personnel)
   Do not breathe dust/fume/gas/mist/vapors/spray.
   (Protective measures against fire and explosion)
   Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
   (Exhaust/ventilator)
   Exhaust/ventilator should be available.
   (Safety treatments)
   Avoid contact with skin.
   Avoid contact with eyes.

Safety Measures
   Wear protective gloves/protective clothing/eye protection/face protection.
   When using do not eat, drink or smoke.

Any incompatibilities
   See “10. Stability and Reactivity”

Advice on general occupational hygiene
   Wash contaminated parts thoroughly after handling.
   Do not eat, drink or smoke when using this product.
   Contaminated work clothing should not be allowed out of the workplace.
   Take off immediately all contaminated clothing and wash it before reuse.

Storage
   Conditions for safe storage
   Keep container tightly closed.
   Store in a cool, dry place. Do not store in direct sunlight.
   Keep under lock and key.

   Container and packaging materials for safe handling
   Glass
   Iron

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8. Exposure controls/personal protection
   Control parameters
   Adopted value
   (4-Methoxyphenol(p-))
   ACGIH(1992) TWA: 5mg/m3 (Eye irr; skin dam)

Exposure controls
   Appropriate engineering controls
   Do not use in areas without adequate ventilation.
   Eye wash station should be available.
   Washing facilities should be available.

   Individual protection measures
   Respiratory protection
   Wear respiratory protection.

   Hand protection
   Wear protective gloves.

   Eye protection
9. Physical and Chemical Properties

Information on basic physical and chemical properties

Physical state: Liquid
Color: Colorless, Clear
Odor: Characteristic odour
pH data is not available.
Boiling point or initial boiling point: 189°C
Boiling range data is not available.
Melting point/Freezing point: -65°C
Decomposition temperature data is not available.
Flammability (gases, liquids and solids) data is not available.
Flash point: (Glycidyl methacrylate) 83°C
Auto-ignition temperature data is not available.
Lower and upper explosion limit/flammability limit data is not available.
Vapor pressure: 0.42 kPa (25°C)
Relative vapor density (Air=1): 4.9
Density and/or relative density: 1.07
Kinematic viscosity data is not available.
Solubility:
Solubility in water: 5 g/100 ml (25°C)
n-Octanol/water partition coefficient: log Pow 0.96
No Particle characteristics data is not available.

10. Stability and Reactivity

Reactivity
Not available.

Chemical stability
Stable under normal storage/handling conditions.

Possibility of hazardous reactions
(Glycidyl methacrylate)
The substance may polymerize due to heating and under the influence of light, peroxides and bases. Reacts violently with strong acids, strong bases and strong oxidants. This generates fire hazard. (ICSC 1679)

Conditions to avoid
Contact with incompatible materials.
Contact with fire source.

Incompatible materials
Strong acids, Bases, Strong oxidizing agents, Peroxides

Hazardous decomposition products
Carbon oxides

11. Toxicological Information

Information on toxicological effects

Acute toxicity

Acute toxicity (Oral)
[GHS Cat. Japan, base data]
(Glycidyl methacrylate)
rat LD50=500mg/kg (MOE assessment vol.3, 2004)
(4-Methoxyphenol(p–))
Glycidyl methacrylate, 3458E-2, 01/07/2020

rat LD50 = 1600 mg/kg (ACGIH, 1997; PATTY, 6th, 2012)

Acute toxicity (Dermal)

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)
rabbit LD50 = 480 mg/kg (SIDS, 2002)
(4-Methoxyphenol(p-))
rabbit LD50 = 2000 mg/kg (NICNAS IMAP, 2018; REACH registration information, Accessed Oct. 2018)

Irritant properties

Skin corrosion/irritation

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)
rabbit necrosis et al (SIDS, 2002)

Serious eye damage/irritation

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)
rabbit moderate to severe irritation (SIDS, 2002)
(4-Methoxyphenol(p-))
rabbit mild to moderate irritation recover within 7 days (NICNAS IMAP, Accessed Oct. 2018)

Sensitization

Skin sensitization

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)
cat. 1: human (NITE primary risk assessment, 2008); guinea pig (SIDS, 2002); EU Skin Sens. 1 (ECHA CL Invit., Access on Jun. 2017)

Skin mutagenicity

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)

Carcinogenicity

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)
cat.1B: (MHLW Carcinogenicity examination, Access on Jun. 2017)
(Glycidyl methacrylate)
EU-Category 1B: Substances presumed to have carcinogenic potential for humans

Reproductive toxicity

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)

STOT

STOT—single exposure

[cat.1]

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)
respiratory apparatus (SIDS, 2002; NITE primary risk assessment, 2008)

STOT—repeated exposure

[cat.1]

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)

Aspiration hazard data is not available.
12. Ecological Information

Ecotoxicity

Aquatic toxicity

Toxic to aquatic life
Harmful to aquatic life with long lasting effects

Hazardous to the aquatic environment (Acute)

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)
Fish (Atheriniformes) LC50=2.8mg/L/96hr (MOE Japan, 2017; OECD SIDS, 2000)
(4-Methoxyphenol(p-))
Crustacea (Daphnia magna) EC50=2.2mg/L/48hr (NLM HSDB, 2018; EPA/OPPT)

Hazardous to the aquatic environment (Long-term)

[GHS Cat. Japan, base data]
(Glycidyl methacrylate)
Crustacea (Daphnia magna) NOEC (Reproductive inhibition)=1.0mg/L/21days (MOE Japan Ecological impact test, 2017)

Water solubility

(Glycidyl methacrylate)
5 g/100 ml (25℃) (ICSC, 2006)
(4-Methoxyphenol(p-))
4 g/100 ml (25℃) (ICSC, 2004)

Persistence and degradability

(Glycidyl methacrylate)
BOD Degradation: 94% (CSCL DB, 1991)
(4-Methoxyphenol(p-))
Degrade rapidly (BOD Degradation: 86% (CSCL DB, 1990))

Bioaccumulative potential

(Glycidyl methacrylate)
log Kow=0.81 (SRC PHYSPROP DB, 2017)
(4-Methoxyphenol(p-))
log Kow=1.58 (PHYSPROP DB, 2018)

Mobility in soil
Mobility in soil data is not available.

Other adverse effects
Ozone depleting chemical data is not available.

13. Disposal considerations

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging

Waste treatment methods
Avoid release to the environment (if this is not the intended use).
Dispose of contents/container in accordance with local/national regulation.

14. Transport Information

UN No.: 2922
Proper Shipping Name:
CORROSIVE LIQUID, TOXIC, N.O.S.
Class or division: 8
Subsidiary hazard(s): 6.1
Packing group: III
ERG GUIDE No.: 154
Special provisions No.: 223; 274

IMDG Code (International Maritime Dangerous Goods Regulations)
UN No.: 2922
Proper Shipping Name: CORROSIVE LIQUID, TOXIC, N.O.S.
Class or division: 8
Subsidiary hazard(s): 6.1
Packing group: III
Special provisions No.: 223; 274

IATA Dangerous Goods Regulations
UN No.: 2922
Proper Shipping Name: CORROSIVE LIQUID, TOXIC, N.O.S.
Class or division: 8
Subsidiary hazard(s): 6.1
Hazard labels: Corrosive & Toxic
Packing group: III
Special provisions No.: A3; A803

Environmental hazards
MARPOL Annex III – Prevention of pollution by harmful substances
Marine pollutants (yes/no): no
MARPOL Annex V – Prevention of pollution by garbage discharge
Carcinogenicity: cat.1, 1A, 1B
Glycidyl methacrylate
Specific target organ toxicity – repeated exposure: cat.1
Glycidyl methacrylate

15. Regulatory Information
Safety, health and environmental regulations/legislation specific for the substance or mixture
US Federal Regulations
Chemicals listed in TSCA Inventory
Glycidyl methacrylate; 4-Methoxyphenol(p–)

Other regulatory information
Ensure this material in compliance with federal requirements and ensure conformity to local regulations.

16. Other information
GHS classification and labelling
Flam. Liq. 4: H227 Combustible liquid
Acute Tox. 4: H302 Harmful if swallowed
Acute Tox. 3: H311 Toxic in contact with skin
Skin Corr. 1: H314 Causes severe skin burns and eye damage
Eye Dam. 1: H318 Causes serious eye damage
Skin Sens. 1: H317 May cause an allergic skin reaction
Muta. 2: H341 Suspected of causing genetic defects
Carc. 1B: H350 May cause cancer
Repr. 2: H361 Suspected of damaging fertility or the unborn child
STOT SE 1: H370 Causes damage to organs after single exposure
STOT RE 1: H372 Causes damage to organs through prolonged or repeated exposure
Aquatic Acute 2: H401 Toxic to aquatic life
Aquatic Chronic 3: H412 Harmful to aquatic life with long lasting effects

Reference Book
This data sheet was created based on the information we currently have and may be revised
according to new information. In addition, the precautions apply only to normal handling,
and in the case of special handling, please make adequate countermeasure to maintain your
safety.
The data given here is based on current knowledge and experience. The purpose of this
Safety Data Sheet is to describe the products in terms of their safety requirements. The
data does not signify any warranty with regard to the products’ properties.
The GHS classification data given here is based on current Japan official data (NITE published in
2018).