

Design Report of Safety Data Sheet

正本/ORIGINAL

*Product Name:	MMA
*Applicant:	Jiangsu Jiankun Chemical Co., LTD.
Supplier:	Jiangsu Jiankun Chemical Co., LTD.
*Composition of the product:	Methyl methacrylate(CAS: 80-62-6): 99.95%; Methacrylic acid(CAS: 79-41-4): 0.005%; 6-tert-butyl-2,4-xyleneol(CAS: 1879-09-0): 0.001%
Warranty of Design:	GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) Tenth revised edition
*Information materials:	HGBZ2405MZK 《Application》、P103103 《Declaration of consistency of components of the sample submitted for inspection》
<p>Design Result of SDS please see next page.</p> <p>Designer:  Auditor:  Approver: </p> <p style="text-align: center;">  </p> <p style="text-align: center;">常州合規思远产品安全技术服务有限公司 Changzhou Hegui Siyuan Products Safety Technology Service Co., Ltd.</p>	

Notes: This SDS is valid before the implementation of the eleventh revised edition GHS.



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Safety Data Sheet

MMA

Version : V2.0.0.1

Report No. : HGBZ2405MZK2

Creation Date : 2024/05/17

Revision Date : -

*According to GHS (Tenth Revised Edition)

1 Identification

Product identifier

Product Name	MMA
CAS No.	80-62-6
EC No.	201-297-1
Molecular Formula	C ₅ H ₈ O ₂

Recommended use of the product and restrictions on use

Relevant identified uses	It is used as a monomer for plexiglass, and is also used in the manufacture of other resins, plastics, coatings, adhesives, lubricants, sizing agents for wood and cork, and paper glazing agents.
Uses advised against	Not for use as medicine, food, household or other use.

Details of the supplier

Applicant Name	Jiangsu Jiankun Chemical Co., LTD.
Applicant Address	No. 88, Yanjiang Avenue, Binjiang Town, Taixing Jiangsu Province
Applicant Post Code	225400
Applicant Telephone	+86-523-87228588
Applicant Fax	+86-523-87672102
Applicant E-mail	28731875@qq.com
Supplier Name	Jiangsu Jiankun Chemical Co., LTD.
Supplier Address	No. 88, Yanjiang Avenue, Binjiang Town, Taixing Jiangsu Province
Supplier Post Code	225400
Supplier Telephone	+86-523-87228588
Supplier Fax	+86-523-87672102
Supplier E-mail	28731875@qq.com

Emergency phone number

Emergency phone number	0523-87228756
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2 Hazard(s) identification

Hazard classification according to GHS

Flammable Liquids	Category 2
Skin Corrosion/Irritation	Category 2
Sensitization – Skin	Category 1
Specific target organ toxicity, single exposure; Respiratory	Category 3

tract irritation	
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GHS Label elements

Hazard pictograms	
Signal word	Danger

Hazard statements

H225	Highly flammable liquid and vapour
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H335	May cause respiratory irritation

Precautionary statements

◆ Prevention

P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P233	Keep container tightly closed.
P240	Ground and bond container and receiving equipment.
P241	Use explosion-proof [electrical/ventilating/lighting] equipment.
P242	Use non-sparking tools.
P243	Take action to prevent static discharges.
P261	Avoid breathing gas/mist/vapour/spray.
P264	Wash hands and other parts of the body (if related) thoroughly after handling.
P271	Use only outdoors or with adequate ventilation.
P272	Contaminated work clothing should not be allowed out of the workplace.
P280	Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.

◆ Response

P319	Get medical help if you feel unwell.
P321	Specific treatment (see related instructions on the label).
P302+P352	IF ON SKIN: Wash with plenty of water.
P304+P340	IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P332+P317	If skin irritation occurs: Get medical help.
P333+P317	If skin irritation or rash occurs: Get medical help.
P362+P364	Take off contaminated clothing and wash it before reuse.
P370+P378	Dry chemical, carbon dioxide or alcohol-resistant foam.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower].

◆ Storage

P405	Store locked up.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P403+P235	Store in a well-ventilated place. Keep cool.

◆ Disposal

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

◆ Physical and chemical hazards

	Highly flammable liquids, its vapor and air mixture can form explosive mixture.
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◆ Health hazards

Inhaled	Cough. Shortness of breath. Sore throat.
Ingestion	Nausea. Vomiting. Abdominal pain.
Skin Contact	Redness.
Eye	Redness. Pain.

◆ Environmental hazards

	Please refer to 12th chapter of SDS.
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3 Composition/information on ingredients**Substance/mixture**

	Substance
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Component	CAS No.	EC No.	Concentration (Volume or weight percent, %)
Methyl methacrylate	80-62-6	201-297-1	99.95
Methacrylic acid	79-41-4	201-204-4	0.005
6-tert-butyl-2,4-xyleneol	1879-09-0	217-533-1	0.001

4 First-aid measures**Description of first aid measures**

General advice	Immediate medical attention is required. Show this safety data sheet (SDS) to the doctor in attendance.
Eye contact	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Skin contact	Remove contaminated clothes. Rinse and then wash skin with water and soap.
Ingestion	Rinse mouth. Give plenty of water to drink. Refer for medical attention.
Inhalation	Fresh air , rest. Refer for medical attention.
Protecting of first-aiders	Ensure that medical personnel are aware of the substance involved. Take precautions to protect themselves and prevent spread of contamination.

Most important symptoms/effects, acute and delayed

1	Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure.
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Indication of any immediate medical attention and special treatment needed

1	Treat symptomatically.
2	Symptoms may be delayed.

5 Fire-fighting measures

Extinguishing media

Suitable extinguishing media	Dry chemical, carbon dioxide or alcohol-resistant foam.
Unsuitable extinguishing media	Do not use a solid water stream as it may scatter or spread fire.

Specific hazards arising from the substance or mixture

1	Will form explosive mixtures with air.
2	Fire exposed containers may vent contents through pressure relief valves thereby increasing fire intensity and/or vapour concentration.
3	Vapours may travel to source of ignition and flash back.
4	Liquid and vapour are flammable.
5	Development of hazardous combustion gases or vapor possible in the event of fire.
6	May expansion or decompose explosively when heated or involved in fire.

Special protective equipment and precautions for fire-fighters

1	As in any fire, wear self-contained breathing apparatus (MSHA/NIOSH approved or equivalent) and full protective gear.
2	Fight fire from a safe distance, with adequate cover.
3	Prevent fire extinguishing water from contaminating surface water or the ground water system.

6 Accidental release measures

Personal precautions, protective equipment and emergency procedures

1	Avoid breathing vapours and contacting with skin and eye.
2	Beware of vapours accumulating to form explosive concentrations.
3	Vapours can accumulate in low areas.
4	Emergency personnel wear positive pressure self-contained breathing apparatus. Wear protective and anti-static clothing. Wear chemical impermeable gloves.
5	Use personal protective equipment, do not breathe gas/mist/vapour/spray.
6	Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.
7	Evacuate personnel to safe areas. Keep people away from and upwind of spill/leak.

Environmental precautions

1	Prevent further leakage or spillage if safe to do so.
2	Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

1	Cover with DRY earth, DRY sand or other non-combustible material followed with plastic sheet to minimize spreading or contact with rain.
2	Water spray reduces evaporation but does not reduce the flammability of spills in confined spaces.
3	It is recommended that emergency personnel wear positive pressure self-contained breathing apparatus and wear anti-static clothing.
4	In case of small amount of spillage, use clean non sparking tools to collect absorption materials.
5	In case of large amount of spillage, construct cofferdam or dig a hole to collect the spillage. Use foam cover to reduce evaporation. Water spray mist can reduce evaporation, but can not reduce the flammability of the leakage in the restricted space.
6	Collect absorbent material using a clean, non-sparking tool.

7	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
8	Cover with anti-solvent foam to reduce evaporation.
9	Cut off the source of the leak as much as possible.
10	Keep leaks in a ventilated place.
11	Absorb spilled material in dry sand or inert absorbent. In case of large amount of spillage, contain a spill by bunding.
12	Remove all sources of ignition. Use spark-proof tools and explosion-proof equipment.
13	Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container.

7 Handling and storage

Precautions for safe handling

1	Avoid inhalation of vapors.
2	Use only non-sparking tools.
3	To prevent fire caused by electrostatic discharge steam, equipment on all metal parts should be grounded.
4	Use explosion proof equipment.
5	Handling is performed in a well ventilated place.
6	Wear suitable protective equipment.
7	Avoid contact with skin and eyes.
8	Keep away from heat/sparks/open flames/ hot surfaces.

Conditions for safe storage, including any incompatibilities

1	Keep containers tightly closed.
2	Keep containers in a dry, cool and well-ventilated place.
3	Keep away from heat/sparks/open flames/hot surfaces.
4	Store away from incompatible materials and foodstuff containers.

8 Exposure controls/personal protection

Control parameters

Component	Country/Region	Limit value - Eight hours		Limit value - Short term	
		ppm	mg/m ³	ppm	mg/m ³
Methyl methacrylate	USA - OSHA	100	410	-	-
	South Korea	50	205	100	410
	Ireland	50	-	100	-
	Germany (AGS)	50	210	100	420
	Denmark	25	102	50	204
	Australia	50	208	100	416
	USA-ACGIH	50	-	100	-
Methacrylic acid	USA - NIOSH	20	70	-	-
	South Korea	20	70	-	-
	Ireland	20	70	40	140
	Germany (DFG)	5	18	10	36

	Denmark	20	70	40	140
	Australia	20	70	-	-
	USA-ACGIH	20	-	-	-

◆ Biological limit values

Biological limit values	No relevant regulations
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◆ Monitoring methods

1	EN 14042 Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents.
2	GBZ/T 300 series standard Determination of toxic substances in workplace air.

Engineering controls

1	Ensure adequate ventilation, especially in confined areas.
2	Ensure that eyewash stations and safety showers are close to the workstation location.
3	Use explosion-proof electrical/ventilating/lighting/equipment.
4	Set up emergency exit and necessary risk-elimination area.

Personal protection equipment

General requirement	
Eye protection	Must wear appropriate safety goggles.
Hand protection	Must wear anti static chemical protective gloves.
Respiratory protection	Must wear appropriate personal respiratory protective equipment.
Skin and body protection	Must wear anti static chemical protective clothing and anti static shoes.

9 Physical and chemical properties

Physical and chemical properties

Physical state	Transparent liquid
Colour	Colorless
Odor	It has a strong spicy taste
Odor threshold	No information available
pH	No information available
Melting point/freezing point(°C)	-48
Initial boiling point and boiling range(°C)	100~101 (760mmHg)
Flash point(Closed cup,°C)	9 (48.2°F)
Evaporation rate	No information available
Flammability	Highly flammable
Upper/lower explosive limits[%(v/v)]	Upper limit : 12.5 ; Lower limit : 2.12
Vapor pressure	51.3 hPa (25°C)
Relative vapour density(Air = 1)	3.46
Relative density(Water=1)	0.936~0.946 (20°C)

Solubility	It can be miscible with ethanol, ether, soluble in many organic solvents such as acetone, slightly soluble in ethylene glycol and water
n-octanol/water partition coefficient	1.38
Auto-ignition temperature(°C)	435
Decomposition temperature(°C)	No information available
Kinematic viscosity	No information available
Particle characteristics	No information available

10 Stability and reactivity

| Stability and reactivity

Reactivity	Contact with incompatible substances can cause decomposition or other chemical reactions.
Chemical stability	Stable under proper operation and storage conditions.
Possibility of hazardous reactions	In contact with inorganic acids and organic peroxides causes a severe polymerization.
Conditions to avoid	Incompatible materials, heat, flame and spark.
Incompatible materials	Inorganic acids, alkali and organic peroxides.
Hazardous decomposition products	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11 Toxicological information

| Acute toxicity

Component	LD ₅₀ (oral)	LD ₅₀ (dermal)	LC ₅₀ (inhalation,4h)
Methacrylic acid	1060mg/kg(Rat)	500mg/kg(Rabbit)	7.1mg/L(Rat)
Methyl methacrylate	7872mg/kg(Rat)	> 5000mg/kg(Rabbit)	78mg/L(Rat)
6-tert-butyl-2,4-xyleneol	530mg/kg(Mouse)	No information available	No information available

| Carcinogenicity

Component	List of carcinogens by the IARC Monographs	Report on Carcinogens by NTP
Methyl methacrylate	Category 3	Not Listed
Methacrylic acid	Not Listed	Not Listed
6-tert-butyl-2,4-xyleneol	Not Listed	Not Listed

| Others

MMA	
Skin corrosion/irritation	Causes skin irritation(Category 2)
Serious eye damage/irritation	Based on available data, the classification criteria are not met
Skin sensitization	May cause an allergic skin reaction(Category 1)
Respiratory sensitization	Based on available data, the classification criteria are not met
Reproductive toxicity	Based on available data, the classification criteria are not met
STOT-single exposure	May cause respiratory irritation(Category 3)
STOT-repeated exposure	Based on available data, the classification criteria are not met

Aspiration hazard	Based on available data, the classification criteria are not met
Germ cell mutagenicity	Based on available data, the classification criteria are not met

12 Ecological information

| Acute aquatic toxicity

Component	Fish	Crustaceans	Algae
Methacrylic acid	LC ₅₀ : 85mg/L (96h)(Fish)	EC ₅₀ : > 130mg/L (48h)(Crustaceans)	No information available
Methyl methacrylate	LC ₅₀ : > 100mg/L (96h)(Fish)	EC ₅₀ : 69mg/L (48h)(Crustaceans)	ErC ₅₀ : >86mg/L (72h)(Algae)
6-tert-butyl-2,4-xyleneol	LC ₅₀ : 2.5mg/L (96h)(Fish)	EC ₅₀ : 2.9mg/L (48h)(Crustaceans)	ErC ₅₀ : 7.1mg/L (72h)(Algae)

| Chronic aquatic toxicity

Component	Fish	Crustaceans	Algae
Methacrylic acid	NOEC : 10mg/L(Fish)	No information available	No information available
Methyl methacrylate	NOEC : 9.4mg/L(Fish)	NOEC : 3.5mg/L(Crustaceans)	NOEC : 86mg/L(Algae)
6-tert-butyl-2,4-xyleneol	No information available	No information available	NOEC : 0.38mg/L(Algae)

| Persistence and degradability

Component	Persistence (water/soil)	Persistence (air)
Methacrylic acid	Low	Low

| Bioaccumulative potential

Component	Bioaccumulative potential	Comments
Methacrylic acid	Low	Log Kow=0.93

| Mobility in soil

Component	Mobility in soil	Soil Organic Carbon-Water Partitioning Coefficient (Koc)
Methacrylic acid	High	1.895

| Results of PBT and vPvB assessment

Component	Results of PBT and vPvB assessment [according to (EC) No 1907/2006]
Methyl methacrylate	Not PBT/vPvB
Methacrylic acid	Not PBT/vPvB
6-tert-butyl-2,4-xyleneol	Not PBT/vPvB

13 Disposal considerations


| Disposal considerations

Waste chemicals	Before disposal should refer to the relevant national and local laws and
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	regulation. Recommend the use of incineration disposal.
Contaminated packaging	Containers may still present chemical hazard when empty. Keep away from hot and ignition source of fire. Return to supplier for recycling if possible.
Disposal recommendations	Refer to section waste chemicals and contaminated packaging.

14 Transport information

Label

Transporting Label	
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IMDG-CODE

UN number	1247
UN proper shipping name	METHYL METHACRYLATE MONOMER, STABILIZED
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II
Marine pollutant (Yes or no)	No

ICAO/IATA-DGR

UN number	1247
UN proper shipping name	METHYL METHACRYLATE MONOMER, STABILIZED
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II

UN-ADR

UN number	1247
UN proper shipping name	METHYL METHACRYLATE MONOMER, STABILIZED
Transport hazard class	3
Transport subsidiary hazard class	None
Packing group	II

15 Regulatory information

International chemical inventory

Component	EC inventory	TSCA	DSL	IECSC	NZIoC	PICCS	KECI	AIICS	ENCS
Methyl methacrylate	√	√	√	√	√	√	√	√	√
Methacrylic acid	√	√	√	√	√	√	√	√	√
6-tert-butyl-2,4-xylenol	√	√	√	√	√	√	√	√	√

[EC inventory] European Inventory of Existing Commercial Chemical Substances

[TSCA]	United States Toxic Substances Control Act Inventory
[DSL]	Canadian Domestic Substances List
[IECSC]	China Inventory of Existing Chemical Substances
[NZIoC]	New Zealand Inventory of Chemicals
[PICCS]	Philippines Inventory of Chemicals and Chemical Substances
[KECI]	Korea Existing Chemicals Inventory
[AIICS]	Australian. Inventory of Industrial Chemical (AIICS)
[ENCS]	Japan Inventory of Existing & New Chemical Substances

Note:

- “√” Indicates that the substance included in the regulations.
 “x” No data or not included in the regulations.

16 Other information

Information on revision

Creation Date	2024/05/17
Revision Date	-
Reason for revision	-

Reference

- [1] IPCS: The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>.
- [2] IARC, website: <http://www.iarc.fr/>.
- [3] OECD: The Global Portal to Information on Chemical Substances, website: <https://www.echemportal.org/echemportal/>.
- [4] CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>.
- [5] NLM: ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>.
- [6] EPA: Integrated Risk Information System, website: <http://cfpub.epa.gov/iris/>.
- [7] U.S. Department of Transportation: ERG, website: <http://www.phmsa.dot.gov/hazmat/library/erg>.
- [8] Germany GESTIS-database on hazard substance, website: <http://gestis-en.itrust.de/>.

Abbreviations and acronyms

CAS	Chemical Abstracts Service	UN	The United Nations
PC-STEL	Short term exposure limit	OECD	Organization for Economic Co-operation and Development
PC-TWA	Time Weighted Average	IMDG-CODE	International Maritime Dangerous Goods CODE
MAC	Maximum Allowable Concentration	IARC	International Agency for Research on Cancer
DNEL	Derived No Effect Level	ICAO	International Civil Aviation Organization
PNEC	Predicted No Effect Concentration	IATA	International Air Transportation Association
NOEC	No Observed Effect Concentration	ACGIH	American Conference of Governmental Industrial Hygienists
LC ₅₀	Lethal Concentration 50%	NFPA	National Fire Protection Association
LD ₅₀	Lethal Dose 50%	NTP	National Toxicology Program
EC ₅₀	Effective Concentration 50%	PBT	Persistent, Bioaccumulative, Toxic
EC _x	Effective Concentration X%	vPvB	very Persistent, very Bioaccumulative
P _{OW}	Partition coefficient Octanol: Water	CMR	Carcinogens, mutagens or substances toxic to reproduction
BCF	Bioconcentration factor	RPE	Respiratory Protective Equipment
ED	Endocrine disruptor		

Disclaimer

This Safety Data Sheet (SDS) was prepared according to UN GHS (the 10th revised edition). The data included was derived from international authoritative database and provided by the enterprise. Other information was based on the present state of our knowledge. We try to ensure the correctness of all information. However, due to the diversity of information sources and the limitations of our knowledge, this document is only for user's reference. Users should make their independent judgment of suitability of this information for their particular purposes. We do not assume responsibility for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product.