Section 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Product name:	Polymethylvinylether/Maleic Anhydride Copolymer
Synonyms:	2,5-Furandione,polymerwithmethoxyethene
Cat. No.:	T2005-0896
CAS No.:	9011-16-9
EC No.:	241-473-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses:	Laboratory chemicals, manufacture of substances.
Uses advised against:	Personal care, Cosmetics

1.3 Details of the supplier of the SDS

Manufacturer:	Hefei TNJ Chemical Industry Co.,Ltd.
Address:	D1508 Xincheng Center, Qianshan Road, Zhengwu District,Hefei, Anhui 230022 China
E-mail:	sales@tnjchem.com
Telephone:	+ 86 551 65418684
Fax:	+ 86 551 65418697

1.4 Emergency telephone number

In China: + 86 551 65418684 (Monday to Friday, 8:30a.m. to 5:30p.m.,Beijing Time)

Section 2: Hazards identification

2.1 Classification of the substance or mixture

GHS Classification

Combustible Dust :
Eye irritatio n : Category 2A
Germ cell mutagenicity : Category 1B
Carcinogenicity : Category 1A
Specific target organ toxicity : Category 1 (hematopoietic system)
- repeated exposure

2.2 GHS Label elements, including precautionary statements

Hazard pictogram(s):	
Signal word:	Danger
Hazard Statements:	**Hazard Statements** May form combustible dust concentrations in air. Causes serious eye irritation. May cause genetic defects. May cause cancer. Causes damage to organs (hematopoietic system) through prolonged or repeated exposure. **Precautionary Statements** **Prevention:** Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash skin thoroughly after handling. Do not eat, drink or smoke when using this product. Wear protective gloves/ protective clothing/ eye protection/ face protection. **Response:** IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF exposed or concerned: Get medical advice/ attention. If eye irritation persists: Get medical advice/ attention. **Storage:** Store locked up. **Disposal:** Dispose of contents/ container to an approved waste disposal plant.

2.3 Other hazards

None known.

Section 3: Composition/information on ingredients

3.1 Component information

CAS No.	Ingredients	Content (%)
9011-16-9	2,5-Furandione, polymer with methoxyethene	>=90.00 - <= 100.00

Section 4: First aid measures

General advice

Move out of dangerous area.

Show this safety data sheet to the doctor in attendance.

Do not leave the victim unattended.

If inhaled

If unconscious, place in recovery position and seek medical advice.

If symptoms persist, call a physician.

In case of skin contact

If skin irritation persists, call a physician.

If on skin, rinse well with water.

If on clothes, remove clothes.

In case of eye contact

Immediately flush eye(s) with plenty of water.

Remove contact lenses.

Protect unharmed eye.

Keep eye wide open while rinsing.

If eye irritation persists, consult a specialist.

If swallowed

Induce vomiting immediately and call a physician.

Keep respiratory tract clear.

Do not give milk or alcoholic beverages.

Never give anything by mouth to an unconscious person.

If symptoms persist, call a physician.

Take victim immediately to hospital.

Most important symptoms and effects, both acute and delayed

Causes serious eye irritation.

May cause genetic defects.

May cause cancer.

Causes damage to organs through prolonged or repeated exposure.

Symptoms may be delayed.

- Tearing
- Blurred vision
- Cancer
- Irritation
- Redness
- Local irritation
- burning or stinging of the eye

Notes to physician

Treat symptomatically.

Section 5: Fire-fighting measures

Suitable extinguishing media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable extinguishing media

High volume water jet

Specific hazards during firefighting

Do not allow run-off from fire fighting to enter drains or water courses.

Hazardous combustion products

Carbon dioxide (CO_2)

Carbon monoxide

Specific extinguishing methods

Standard procedure for chemical fires.

Further information

Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

Special protective equipment for firefighters

In the event of fire, wear self-contained breathing apparatus.

Section 6: Accidental release measures

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

Avoid dust formation.

Avoid breathing dust.

Environmental precautions

Prevent product from entering drains.

Prevent further leakage or spillage if safe to do so.

If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up

Keep in suitable, closed containers for disposal.

Section 7: Handling and storage

Advice on protection against fire and explosion

Avoid dust formation.

Provide appropriate exhaust ventilation at places where dust is formed.

Advice on safe handling

Avoid formation of respirable particles.

Do not breathe vapours/dust.

Avoid exposure - obtain special instructions before use.

Avoid contact with skin and eyes.

For personal protection see section 8.

Smoking, eating and drinking should be prohibited in the application area.

Dispose of rinse water in accordance with local and national regulations.

Conditions for safe storage

Keep container tightly closed in a dry and well-ventilated place.

Observe label precautions.

Electrical installations / working materials must comply with the technological safety standards.

Further information on storage stability

Keep in a dry place.

Section 8 : Exposure controls/personal protection

Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
BENZENE	71-43-2	TWA	0.5 ppm	ACGIH

		STEL	2.5 ppm	ACGIH
		TWA	0.1 ppm	NIOSH REL
		ST	1 ppm	NIOSH REL
		PEL	1 ppm	OSHA CARC
		STEL	5 ppm	OSHA CARC
		TWA	10 ppm	OSHA Z-2
		CEIL	25 ppm	OSHA Z-2
		Peak	50 ppm	OSHA Z-2
		PEL	1 ppm	CAL PEL
		STEL	5 ppm	CAL PEL

Engineering measures

Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below exposure guidelines (if applicable) or below levels that cause known, suspected or apparent adverse effects.

Personal protective equipment

Respiratory protection

In the case of dust or aerosol formation use respirator with anapproved filter within the capabilities of the respirator/filter combination. Where concentrations are above recommended limits or are unknown, or a cartridge type respirator is not adequate, wear a positive-pressure supplied-air respirator.

Hand protection

Material : butyl-rubber

Break through time : 480 min

Glove thickness : > 0.5 mm

Remarks : The exact break through time can be obtained from the protective glove producer and this has to be observed. Gloves should be discarded and replaced if there is any indication of degradation or chemical breakthrough.

Eye protection

Tightly fitting safety goggles

Eye wash bottle with pure water

Skin and body protection

Work uniform or laboratory coat.

Hygiene measures

When using do not eat or drink.

When using do not smoke.

Wash hands before breaks and at the end of workday.

Section 9: Physical and chemical properties

Appearance : powder

Physical state : solid

Colour : No data available

Odour : slight

Odour Threshold : Not applicable

pH : Not applicable

Melting point/freezing point : not determined

Boiling point/boiling range : not determined

Flash point : not determined

Evaporation rate : Not applicable

Flammability (solid, gas) : not determined

Flammability (liquids) : Static Accumulating liquid

Flammability (liquids) :

- Upper explosion limit : Upper explosion limit not determined
- Lower explosion limit : Lower explosion limit not determined

Vapour pressure : Not applicable

Relative vapour density : Not applicable

Relative density : No data available

Density : 1 g/cm3 (20 °C)

Solubility(ies)

- Water solubility : slightly soluble
- Solubility in other solvents : No data available

Partition coefficient: n-octanol/water : not determined

Thermal decomposition : No data available

Viscosity

- Viscosity, dynamic : Not applicable
- Viscosity, kinematic : Not applicable

Oxidizing properties : Not applicable

Molecular weight : No data available

Section 10: Stability and reactivity

Reactivity

No dangerous reaction known under conditions of normal use.

Chemical stability

Stable under normal conditions.

Possibility of hazardous reactions

Dust may form explosive mixture in air.

Conditions to avoid

Protect from frost, heat and sunlight.

Incompatible materials

Strong bases

Oxidizing agents

Strong acids

Hazardous decomposition products

No hazardous decomposition products are known.

Section 11: Toxicological information

Information on likely routes of exposure

Inhalation

Eye contact

Skin contact

Ingestion

Acute toxicity

Not classified based on available information.

Components:

2,5-Furandione, polymer with methoxyethene:

Acute oral toxicity : LD50 (Rat): > 5,000 mg/kg

BENZENE:

Acute oral toxicity : LD50 (Rat): > 2,000 mg/kg
Acute inhalation toxicity : LC50 (Rat): 43.7 mg/l
Exposure time: 4 h
Test atmosphere: vapour
Method: OECD Test Guideline 403
Acute dermal toxicity : LD50 (Rabbit): > 8,260 mg/kg

Skin corrosion/irritation

Not classified based on available information.

Product:

Remarks: May cause skin irritation and/or dermatitis.

Components:

2,5-Furandione, polymer with methoxyethene:
Species: Rabbit
Result: Mild skin irritation

BENZENE:
Species: Rabbit
Result: Irritating to skin.

Serious eye damage/eye irritation

Causes serious eye irritation.

Product:

Remarks: May cause irreversible eye damage.

Components:

2,5-Furandione, polymer with methoxyethene:
Species: Rabbit
Result: Mild eye irritation

BENZENE:
Species: Rabbit
Result: Irritating to eyes.

Respiratory or skin sensitisation

Skin sensitisation: Not classified based on available information.
Respiratory sensitisation: Not classified based on available information.

Components:

2,5-Furandione, polymer with methoxyethene:
Test Type: Human Repeat Insult Patch Testing (HRIPT)
Assessment: Does not cause skin sensitisation.Page: 9

Germ cell mutagenicity

May cause genetic defects.

Components:

2,5-Furandione, polymer with methoxyethene:
Genotoxicity in vitro
- Test Type: Ames test
- Test species: Salmonella typhimurium
- Metabolic activation: with and without metabolic activation

- Result: negative

Genotoxicity in vivo

- Test Type: Micronucleus test
- Test species: Mouse
- Result: negative

BENZENE:

Germ cell mutagenicity Assessment

In vivo tests showed mutagenic effects

Carcinogenicity

May cause cancer.

Components:

BENZENE:

Carcinogenicity - Assessment : Positive evidence from human epidemiological studies

Reproductive toxicity

Not classified based on available information.

STOT - single exposure

Not classified based on available information.

STOT - repeated exposure

Causes damage to organs (hematopoietic system) through prolonged or repeated exposure.

Components:

BENZENE:

Exposure routes: Ingestion

Target Organs: hematopoietic system

Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Exposure routes: Inhalation

Target Organs: hematopoietic system

Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Exposure routes: Skin contact

Target Organs: hematopoietic system

Assessment: The substance or mixture is classified as specific target organ toxicant, repeated exposure, category 1.

Repeated dose toxicity

Components:

2,5-Furandione, polymer with methoxyethene:

Species: Rat, female

No observed adverse effect level: 4109 mg/kg

Application Route: Oral

Exposure time: 90 day

Remarks: No significant adverse effects were reported

Species: Rat, male

No observed adverse effect level: 3530 mg/kg

Application Route: Oral

Exposure time: 90 day

Remarks: No significant adverse effects were reported

Aspiration toxicity

Not classified based on available information.

Components:

BENZENE:

The substance or mixture is known to cause human aspiration toxicity hazards or has to be regarded as if it causes a human aspiration toxicity hazard.

Further information

Product:

Remarks: No data available

Carcinogenicity:

IARC

Group 1: Carcinogenic to humans

BENZENE 71-43-2

OSHA

OSHA specifically regulated carcinogen

BENZENE 71-43-2

NTP

Known to be human carcinogen

BENZENE 71-43-2

Section 12: Ecological information

Ecotoxicity

Product:

Ecotoxicology Assessment

Short-term (acute) aquatic hazard : Not classified based on available information.

Long-term (chronic) aquatic hazard : Not classified based on available information.

Components:

2,5-Furandione, polymer with methoxyethene:

Toxicity to fish :

LC50 (Oncorhynchus mykiss (rainbow trout)): 211 mg/l

Exposure time: 96 h

Test Type: static test

LC50 (Lepomis macrochirus (Bluegill sunfish)): 345 mg/l

Exposure time: 96 h

Test Type: static test

BENZENE:

Toxicity to fish :

LC50 (Oncorhynchus mykiss (rainbow trout)): 5.3 mg/l

Exposure time: 96 h

Test Type: flow-through test

Toxicity to daphnia and other aquatic invertebrates :
EC50 (Daphnia magna (Water flea)): 8.76 - 15.6 mg/l
Exposure time: 48 h
Test Type: static test

Toxicity to algae :
EC50 (Pseudokirchneriella subcapitata (green algae)): 100 mg/l
End point: Growth inhibition
Exposure time: 72 h
Test Type: static test
Method: OECD Test Guideline 201

Persistence and degradability

Components:

2,5-Furandione, polymer with methoxyethene:
Biodegradability
Result: Not readily biodegradable.
Exposure time: 28 d
Method: OECD Test Guideline 310

BENZENE:
Biodegradability
Result: Readily biodegradable.
Biodegradation: 96 %
Exposure time: 28 d
Method: OECD Test Guideline 301F
No data available

Bioaccumulative potential

Components:

BENZENE:
Partition coefficient: n-octanol/water : log Pow: 2.13
No data available

Mobility in soil

Components:

No data available

Other adverse effects

No data available

Product:

Additional ecological information : No data available

Components:

Section 13: Disposal considerations

Disposal methods

General advice

Do not dispose of waste into sewer.
Do not contaminate ponds, waterways or ditches with chemical or used container.
Send to a licensed waste management company.

Contaminated packaging

Empty remaining contents.

Dispose of as unused product.

Do not re-use empty containers.

Section 14: Transport information

International transport regulations

REGULATION

ID NUMBER	PROPER SHIPPING NAME	*HAZARD CLASS	SUBSIDIARY HAZARDS	PACKING GROUP	MARINE POLLUTANT / LTD. QTY.

CFR_RAIL_C

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - CARGO

Not dangerous goods

INTERNATIONAL AIR TRANSPORT ASSOCIATION - PASSENGER

Not dangerous goods

INTERNATIONAL MARITIME DANGEROUS GOODS

Not dangerous goods

MX_DG

Not dangerous goods

TDG_INWT_C

Not dangerous goods

TDG_RAIL_C

Not dangerous goods

TDG_ROAD_C

Not dangerous goods

U.S. DOT - INLAND WATERWAYS

Not dangerous goods

U.S. DOT - ROAD

Not dangerous goods

***ORM = ORM-D, CBL = COMBUSTIBLE LIQUID**

Marine pollutant		no

Dangerous goods descriptions (if indicated above) may not reflect quantity, end-use or region-specific exceptions that can be applied. Consult shipping documents for descriptions that are specific to the shipment.

Section 15: Regulatory information

TSCA list

No substances are subject to a Significant New Use Rule.

No substances are subject to TSCA 12(b) export notification requirements.

EPCRA - Emergency Planning and Community Right-to-Know Act

CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
BENZENE	71-43-2	10	500

SARA 304 Extremely Hazardous Substances Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

Combustible Dust

- Serious eye damage or eye irritation
- Germ cell mutagenicity
- Carcinogenicity
- Specific target organ toxicity (single or repeated exposure)

SARA 302

This material does not contain any components with a section 302 EHS TPQ.

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

BENZENE 71-43-2 1.99 %

US State Regulations

Pennsylvania Right To Know

2,5-Furandione, polymer with methoxyethene 9011- 16-9

New Jersey Right To Know

2,5-Furandione, polymer with methoxyethene 9011- 16-9

BENZENE 71-43-2

California Prop. 65

WARNING: This product can expose you to chemicals including benzene, which is/are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

The components of this product are reported in the following inventories:

TCSI : On the inventory, or in compliance with the inventory

TSCA : For Cosmetic Use Only

AIIC : On the inventory, or in compliance with the inventory

DSL	:	All components of this product are on the Canadian DSL
ENCS	:	On the inventory, or in compliance with the inventory
ISHL	:	On the inventory, or in compliance with the inventory
KECI	:	On the inventory, or in compliance with the inventory
PICCS	:	On the inventory, or in compliance with the inventory
IECSC	:	On the inventory, or in compliance with the inventory
NZIoC	:	Not in compliance with the inventory

Inventories

AIIC (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TECI (Thailand), TSCA (USA)

Other regulations

US. Drug Enforcement Administration (DEA) Listed Precursor and Essential Chemicals (21 CFR 1310) Not applicable

Section 16: Other information

None

Declare to reader

The information in this Safety Data Sheet (SDS) was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable. According to REACH Article 31(5), the SDS shall be supplied in an official language of the Member State(s) where the substance or mixture is placed on the market, unless the recipient Member State(s) concerned provide otherwise. It should also be noted that this SDS is applicable to the countries with English as an official language.