



Section 1: Identification

PRODUCT AND COMPANY INFORMATION

Product Name: Maleic anhydride **Molecular Formula:** C₄H₂O₃
Catalog Number: M-158
Company: Scientific Polymer Products, Inc.
6265 Dean Parkway
Ontario, NY 14519
Telephone: 585/265-0413
Fax: 585/265-1390
Website: www.scipoly.com
Emergency Phone Number: 800-255-3924 (CHEM TEL)

Section 2: Hazards Identification

Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral, Category 4, H302
Skin corrosion Category 1B, H314
Serious eye damage, Category 1, H318
Respiratory sensitization, Category 1, H334
Skin sensitization, Category 1, H317
Specific target organ toxicity- repeated exposure, Inhalation, Category 1, Respiratory system, H372
Specific target organ toxicity-repeated exposure, Oral, Category 2, Kidney, H373
Acute aquatic toxicity, Category 3, H402

GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H302 Harmful if swallowed.
H314 Causes severe skin burns and eye damage.
H317 May cause an allergic skin reaction.
H318 Causes serious eye damage.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H372 Causes damage to organs (Respiratory system) through prolonged or repeated exposure if inhaled.
H373 May cause damage to organs (Kidney) through prolonged or repeated exposure if swallowed.
H402 Harmful to aquatic life.

Precautionary statement(s)

P260 Do not breathe dust/fumes/gas/mist/vapors/spray.
P264 Wash skin thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.

P272	Contaminated work clothing should not be allowed out of the workplace.
P273	Avoid release to the environment.
P280	Wear protective gloves/ protective clothing/ eye protection/ face protection.
P285	In case of inadequate ventilation wear respiratory protection.
P301+P312+P330	IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.
P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.
P304+P340+P310	IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.
P305+P351+P338+P310	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.
P333+P313	If skin irritation or rash occurs: Get medical advice/attention.
P342+P311	If experiencing respiratory symptoms: Call a POISON CENTER/doctor.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

Hazards not otherwise classified (HNOC) or not covered by GHS – none

To the best of our knowledge, the toxicological properties of this chemical have not been thoroughly investigated. Use appropriate procedures and precautions to prevent or minimize exposure.

Section 3: Composition/Information on Ingredients

Ingredient	CAS Number	Concentration (%)
Maleic anhydride	108-31-6	100

Section 4: First Aid Measures

Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Take victim immediately to hospital. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician

Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11

Indication of any immediate medical attention and special treatment needed

No data available

Section 5: Fire-Fighting Measures

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special hazards arising from the substance or mixture

No data available

Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

Further information

No data available

Section 6: Accidental Release Measures**Personal precautions, protective equipment and emergency procedures**

Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

For personal protection see section 8.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods and materials for containment and cleaning up

Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Reference to other sections

For disposal see section 13.

Section 7: Handling and Storage**Precautions for safe handling**

Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Further processing of solid materials may result in the formation of combustible dusts. The potential for combustible dust formation should be taken into consideration before additional processing occurs. Provide appropriate exhaust ventilation at places where dust is formed. For precautions see section 2.

Conditions for safe storage, including any incompatibilities

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

Moisture sensitive.

Storage class (TRGS 510): Non-combustible, acute toxic Cat. 3/ Toxic hazardous materials or hazardous materials causing chronic effects

Specific end use(s)

Laboratory chemicals, Manufacture of substances

Section 8: Exposure Controls/Personal Protection**Exposure Guidelines**

Component	CAS No.	Value	Control parameters	Basis
Maleic anhydride	108-31-6	TWA	0.100000	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Eye, skin & Upper Respiratory Tract Irritation Adopted values or notations enclosed are those for which changes Are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen Sensitizer		

		TWA	0.250000 ppm 1.000000 mg/m3	USA. Occupational Exposure Limits (OSHA)-Table Z-1 Limits for Air Contaminants
		The value in mg/m3 is approximate		
		TWA	0.250000 ppm 1.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		TWA	0.010000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Respiratory sensitization Adopted values or notations enclosed are those for which changes Are proposed in the NIC See Notice of Intended Changes (NIC) Not classifiable as a human carcinogen Sensitizer		
		TWA	0.01 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Dermal Sensitization Respiratory sensitization 2015 Adoption Not classifiable as a human carcinogen		
		PEL	0.1 ppm 0.4 mg/m3	California permissible exposure limits for chemical contaminants (Title 8, Article 107)

Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin protection

Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.

Body Protection

Complete suit protecting against chemicals. Flame retardant antistatic protective clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection

Where risk assessment shows air purifying respirators are appropriate use a full face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Control of environmental exposure

Prevent further leakage of spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Section 9: Physical and Chemical Properties

Information on basic physical and chemical properties

a)	Appearance	Form: Solid
b)	Odor	No data available
c)	Odor Threshold	No data available
d)	pH	No data available
e)	Melting point/freezing point	No data available
f)	Initial boiling point and boiling range	200° C (392° F)
g)	Flash point	103.3°C (218° F)
h)	Evaporation rate	No data available
i)	Flammability (solid, gas)	No data available
j)	Flammability or explosive limits	
	Upper	No data available
	Lower	No data available
k)	Vapor pressure	No data available
l)	Vapor density	No data available
m)	Relative density	1.484 g/cm ³ (20° C (68° F))
n)	Water solubility	No data available
o)	Partition coefficient: n- octanol/water	No data available
p)	Auto-ignition temperature	No data available
q)	Decomposition temperature	No data available
r)	Viscosity	No data available
s)	Explosive properties	No data available
t)	Oxidizing properties	No data available

Other safety information

No data available

Section 10: Stability and Reactivity

Reactivity

No data available

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

No data available.

Conditions to avoid

No data available

Incompatible materials

Strong oxidizing agents, Strong acids, Strong bases, Strong reducing agents, Alkali metals, Amines

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions- Carbon oxides

Other decomposition products- no data available

In the event of fire: see section 5

Section 11: Toxicological Information

Information on toxicological effects

Acute toxicity

LD50 Oral-Rat-male and female-1,090 mg/kg
(OECD Test Guideline 401)

LC50 Inhalation-Rat-1 h- >4.35 mg/l

LD50 Dermal-Rabbit-female-2,620 mg/kg

Skin corrosion/irritation

Skin-Rabbit

Result: Causes burns- 4 h

Serious eye damage/eye irritation

Eyes-Rabbit

Result: Corrosive

Respiratory or skin sensitization

-Rat

Result: May cause sensitization by inhalation

Buehler Test- Guinea pig

Result: May cause sensitization by skin contact
(OECD Test Guideline 406)

Germ cell mutagenicity

Ames Test

Salmonella typhimurium

Result: Negative

OECD Test Guideline 475

Rat-Male and female

Result: Negative

Carcinogenicity

Carcinogenicity -Rat-Subcutaneous

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Tumorigenic: Tumors at site of application.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Reproductive toxicity

Reproductive toxicity -Rat-Oral

Effects on fertility: Female fertility index (e.g.; # females pregnant per # sperm positive females; # females pregnant per # females mated). Effects on Fertility: Male fertility index (e.g.; # males impregnating females per # males exposed to fertile nonpregnant females).

Reproductive toxicity – Rat- Oral

Effects on Newborn: Growth statistics (e.g.; reduced weight gain)

Developmental Toxicity –Rat –Oral

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g.; stunted fetus)

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

Inhalation-Causes damage to organs through prolonged or repeated exposure. –Respiratory system

Oral- May cause damage to organs through prolonged or repeated exposure. -Kidney

Aspiration hazard

No data available

Additional Information

Repeated dose toxicity

Rat-male-LOAEL: 250 mg/kg- OECD Test Guideline 408

RTECS: ON3675000

To the best of our knowledge, the toxicological properties of this chemical have not been thoroughly investigated. Use appropriate procedures and precautions to prevent or minimize exposure.

Section 12: Ecological Information

Toxicity

Toxicity to fish	Static test LC50- Oncorhynchus mykiss (Rainbow trout)- 75 mg/l- 96 h
Toxicity to daphnia and other aquatic invertebrates	Static test EC50- Daphnia magna (Water flea)- 330 mg/l- 48 h
Toxicity to algae	Growth inhibition EC50- Selenastrum capricornutum (Green algae)- >150 mg/l- 72 h (OECD Test Guideline 201)
Toxicity to bacteria	EC10- Pseudomonas putida- 44.6 mg/l- 18 h (DIN 38 412 Part 8)

Persistence and degradability

Biodegradability	Biotic/ Aerobic- Exposure time 28 d Result: 73-81% Readily biodegradable
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Bioaccumulative potential

No data available

Mobility in soil

No data available

Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

Other adverse effects

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal. Very toxic to aquatic life.

Section 13: Disposal Considerations

Waste treatment methods

Product

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional and national hazardous waste regulations to ensure complete and accurate classification.

Contaminated packaging

Dispose of as unused product.

Section 14: Transport Information

DOT (US)

UN number: 2215	Class: 8	Packing group: III
Proper shipping name: Maleic anhydride		
Reportable Quantity (RQ): 5,000 lbs		
Poison Inhalation Hazard: No		

IMDG

UN number: 2215	Class: 8	Packing group: III
Proper shipping name: Maleic anhydride		

IATA

UN number: 2215	Class: 8	Packing group: III
Proper shipping name: Maleic anhydride		

Section 15: Regulatory Information

SARA 302 Components

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

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

Maleic anhydride	CAS no. 108-31-6
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Massachusetts Right to Know Components

Maleic anhydride	CAS No. 108-31-6
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Pennsylvania Right to Know Components

Maleic anhydride	CAS No. 108-31-6
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New Jersey Right to Know Components

Maleic anhydride	CAS No. 108-31-6
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California Prop. 65 Components

This product does not contain any chemicals known to the state of California to cause cancer, birth defects, or any other reproductive harm.

Section 16: Other Information

HMIS Rating

Health:	3
Flammability:	0
Reactivity:	0

NFPA Rating

Health:	3
Flammability:	0
Reactivity:	0

This material is intended for laboratory use only. It is not sold or intended for drug, household or other uses. The information represents the most accurate and complete data currently available to us. However, we make no warranty, express or implied, with respect to such information, and we assume no liability resulting from its use.