Material Safety Data Sheets

Printing Date: 08/01/2024 Revision Time: 08/01/2024

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

1.1. Product identifier

Trade Name:	**EVEC Rubber Compound**
Product-type	Mixture
Chemical Name	Polyisoprene-silica Rubber Compound.

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

Application of the substance/ the mixture	Tire Manufacturing
Uses advised against	No further relevant information available

1.3. Details of the supplier of the safety data sheet

Manufacturer/Supplier:	Ecombine Advanced Materials Co., Ltd. NO.43 Zhengzhou Road Qingdao,266042 China.
E-mail address of the competent person responsible for the SDS:	jsyf@ecombine.com

1.4. Emergency telephone number:

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC)No 1272/2008

1. Skin Sensitization 1	H317
2. Acute Toxicity 4	H302
3. Reproduction 1B	H360
4. Aquatic Chronic 1	H410

2.2. Label elements

Labelling according to Regulation (EC)No 1272/2008

Hazard pictogram

Signal word	Warning
Hazard-determining components of labelling	N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine
Hazard statements	H302: Harmful if swallowed. H317: May cause an allergic skin reaction. H360: May damage fertility or the unborn child

	H410: Very toxic to aquatic life with long lasting effects.	
Precautionary statements	P103	Read label before use.
	P262	Do not get in eyes, on skin, or on clothing.
	P332	If skin irritation occurs, wash with soap and water, if irritation persists, seek medical attention.
	P402+403+411	Store in a dry, well ventilated place, store at temperatures not exceeding 45℃.
	P501	Dispose of contents/container in accordance with local/regional/national/international regulations.

SECTION 3: Composition/information on ingredients

Substance/Mixture: Mixture

Ingredients

Chemical Name:	**CAS NO.**	**%(w/w)**
Polyisoprene	9003-31-0	59.5%
Silica	7631-86-9	29.8%
Microcrystalline wax	63231-60-7	0.6%
Hazardous Components		
3-(Triethoxysilyl)propanethiol STOT SE 3: H335; Eye Irrit. 2: H319; Skin Irrit. 2: H315	14814-09-6	4.3%
Zinc Oxide Acute aquatic toxicity 1: H400; Chronic aquatic toxicity1: H410	1314-13-2	2.0%
Stearic Acid Skin Irrit.2:H315; Eye Irrit.2: H319	57-11-4	1.2%
N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine Acute toxicity, Category 4: H302; Skin sensitization, Category 1: H317; Acute aquatic toxicity, Category 1: H400; Chronic aquatic toxicity, Category 1:H410; May damage fertility or the unborn child, Category 1B, H360 May damage fertility or the unborn child.	793-24-8	1.7%
2,2,4-trimethyl-1,2dihydroquinoline Aquatic Chronic 3, H412	26780-96-1	0.9%

SECTION 4: First aid measures

4.1 Description of first aid measures

General Information: Spontaneous penetration of rubber compounds into human organism is impossible.

	Rubber compound at normal conditions is stable and non-volatile. Under high temperatures and during rubber processing release of monomer vapors are possible which in poor ventilated areas may cause irritation of eyes mucous and upper respiratory ways. Contact with eyes may cause mechanical damage, irritation of eyes mucous, delacrimation. No significant health hazard in normal industrial use conditions. Contact with melted/ heated product may cause thermal burns.
Inhalation:	In emergency and in case of poisoning by rubber combustion products or if decomposition or thermal destruction products are inhaled: Move an exposed person to fresh air at once. Keep warm and at rest. If there is respiratory distress, give oxygen. If respiration stops or shows signs of failing, apply artificial respiration. Get medical attention.
Skin contact:	Wash with soap and water, remove contaminated clothing and launder before reuse. If irritation persists, seek medical attention. In case of contact with hot product remove contaminated clothing and wash skin with plenty of running water. Get medical attention.
Eye contact:	Rinse the eye immediately with plenty of water (low pressure) for at least 15 minutes. Remove contact lenses. Get medical attention.
Ingestion:	In case of accidental swallowing: Wash out mouth with water and give plenty of water to drink, provided person is conscious. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have the exposed person lean forward. Get medical attention.

4.2 Most important symptoms and effects, both acute and delayed

No information available

4.3 Indication of any immediate medical attention and special treatment needed

No further information available

SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing agents:	Use foam, dry chemical, carbon dioxide, sand or water spray.
Unsuitable extinguishing media:	No information.

5.2 Special hazards arising from the substance or mixture

Combustion generates irritating and toxic fumes.
Burning causes emissions of carbon oxide.

5.3 Advice for firefighters

Protective equipment:	Wear canvas protective suit, gloves, helmets, face shields, rubber or kersey boots, gas mask.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

6.2 Environmental precautions:

Not available.

6.3 Methods and material for containment and cleaning up

Collect mechanically and place into a suitable disposal container. Avoid generating dusty conditions. Remove all sources of ignition. Use a spark-proof tool.

6.4 Reference to other sections

See Section 7 for information on safe handling.

See Section 8 for information on personal protection equipment.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Information about fire and explosion protection:	Handle in accordance with good industrial hygiene and safety practice. Provide input-extract and local ventilation of work zones. Provide thorough sealing and grounding of process equipment. Regularly control work zone air. Use explosion-proof apparatus / fittings and spark-proof tools. Avoid naked flames. Remove ignition sources. Avoid sparks. Do not smoke.
General occupational hygiene	Comply with personal hygiene measures and use the personal protective equipment (see Section 8). Do not smoke, eat or drink in the workplace. Do not inhale gases / fumes / aerosols. Work rooms must be equipped with adequate ventilation and exhaust equipment to collect the gas/vapours that may be evolved during handling. Keep away from food stuffs, beverages and feed. Wash hands before breaks and at the end of work. Store protective clothing separately.

7.2 Conditions for safe storage, including any incompatibilities

Requirements to be met by storerooms and receptacles:	Store in a dry, well-ventilated area, at temperature not exceeding 30°C. Keep away from direct sunlight, atmospheric precipitation and incompatible substances.

	Keep away from heat, sparks, and flame. Keep away from sources of ignition. Prevent from freezing.
Information about storage in one common storage facility	Store away from oxidizing agents.
Further information about storage conditions:	No further relevant information available.

7.3 Special end use(s)

No further relevant information available.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

None data available for rubber elastomers. For the additives, related data from respective MSDS are listed below:

Exposure limits:

N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine:

OSHA PEL/8Hr-TWA = 15mg/m^3 (Total Dust).

OSHA PEL/8Hr-TWA = 0.5 mg/m^3 (Respirable Dust).

ACGIH TLV/8-Hr TWA = 10 mg/m^3.

Wax:

ACGIH TLV/8-Hr TWA = 2 mg/m^3.

Silica:

ACGIH TLV/8-Hr TWA = 10 mg/m^3.

8.2 Exposure controls

Appropriate engineering controls:

Forced-air and exhaust ventilation in work zones.

Sealing and grounding of equipment and communications.

Usage of intrinsically safe equipment.

Personal protection equipment:

Respiratory tract:

Not required (if is used workplace conditions).

In emergency or in case of increase of hazardous substances concentration at the workplace wear positive pressure MSHA/NIOSH-approved self-contained breathing apparatus.

Hand protection:

Wear approved protective gloves.

Eye protection:

Wear approved safety goggles.

Skin protection:

Wear protective clothing and footwear, in contact with the hot product wear thermally resistant gloves.

Environmental exposure controls: No further information available.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state at 20°C and 101.3 kPa	Solid
Appearance	Rubber
Odour	Peculiar

Color	Brown to black
pH value	Not applicable, insoluble
Melting point	>200℃
Ignition temperature	>315℃
Auto-ignition temperature	>400℃
Relative density	1.18-1.20 g/cm^3
Solubility	Insoluble in water. Soluble in aromatic and aliphatic solvents (benzene,toluene, heptane, hexane etc.)
Flammability	Does not ignite spontaneously, burn only upon entering into a source of fire.
Explosive properties	Non explosive
Average molecular weight	300000-400000
Granulometry	Not applicable, substance is not marketed or used in granular form.

SECTION 10: Stability and reactivity

10.1 Reactivity	Undergoes oxidation, oxidative destruction.
10.2 Chemical stability	Stable under normal temperatures and pressures.
10.3 Possibility of hazardous reactions	Combustion generates irritating and toxic fumes. Burning causes emissions of carbon oxide.
10.4 Conditions to avoid	Avoid high temperatures. Avoid naked flame. Avoid exposure to direct sun beams. Avoid contact with water
10.5 Incompatible materials:	Avoid the contact with oxidising substances.
10.6 Hazardous decomposition products:	Carbon monoxide, Carbon dioxide, Nitrogen oxides.

SECTION 11: Toxicological information

General information:

Rubber compounds are blends of polymer, chemical additives and extended with MINERAL oil. In usual industrial conditions, the SSBR and HCBR elastomer is very stable. But other major additives may cause effects other than elastomers, therefore the relative data of major additives were listed for reference. The source of the toxicological data for each of the major components listed are the SDS of their suppliers.

11.1 Silica

Skin Irritation: Mildly irritation

Eye Irritation: Mildly irritaition

Carcinogenicity status:

This product is NOT listed as a carcinogen or suspected carcinogen by NTP, IARC, ACGIH or OSHA.

Medical Conditions Aggravates: None Known.

Disclaimer: Silica in the rubber compounds have been modified and chemically bonded with polymers, therefore the

effects of silica as powder are eliminated.

11.2 Bis (Triethoxysilylpropyl)Tetrasulfane

Toxicity values:

Route	Species	Test	Value	Units
ORAL	RAT	LD50	>17675	mg/kg
DERMAL	RAT	LD50	>4983	mg/kg

Relevant hazards for substance:

Hazard	Route	Basis
Skin corrosion/irritation	DRM	Based on test data
Serious eye damage/irritation	OPT	Based on test data
STOT-single exposure	INH	Based on test data

11.3 Stearic Acid

Acute toxicity: ivn-mus LD50:23 mg/kg
ivn-rat LD50: 21500 ug/kg
orl-rat LDLo: 4640 mg/kg

Skin corrosion/irritation: skn-rbt LD50:>5 g/kg
skn-hmn 75 mg/3D-I MLD
skn-rbt 500 mg/24H MOD

Serious eye damage/irritation: No data available

Respiratory or skin sensitization: No data available

Germ cell mutagenicity: No data available

Carcinogenicity: imp-mus TDLo:400 mg/kg

Reproductive toxicity: No data available

Stot-single exposure: No data available

Stot-repeated exposure: No data available

Aspiration hazard: No data available

11.4 N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine

Acute toxicity: LD50(Oral,Rat):3580 mg/kg
LD50(Dermal Rabbit): >7940 ug/kg
LC50(Inhalation, Rat): Not available.

Skin corrosion/irritation: Species: Rabbit
Exposure time: 72h
Result: No skin irritation

Serious eye damage/irritation: Species: Rabbit
Exposure time: 72h
Result: slight

Respiratory or skin sensitization: Test Type: Skin sensitization

Species: Guinea pig
Result: May cause sensitization by skin contact.

Test Type: Human experience
Result: May cause sensitization by skin contact.

Germ cell mutagenicity:

Genotoxicity in vitro : Test Type: Mutagenicity - Bacterial
Metabolic activation: +/- activation
Method: Bacterial Reverse Mutation Assay
Result: negative
: Metabolic activation: +/- activation
Method: In vitro Mammalian Chromosome Aberration Test
Result: positive

Genotoxicity in vivo : Test Type: various
Species: Rat
Result: negative

Carcinogenicity:

Species: Rat, (Male and Female)
Application Route: Ingestion
Method: OECD Test Guideline 451
Remarks: Based on available data, the classification criteria are not met.

Reproductive toxicity:

Effects on fertility : Test Type: OECD
Test No. 421: Reproduction/Developmental Toxicity Screening Test
Species: Rat
Application Route: Oral
NOAEL: 100 mg/kg,
F1: 100 mg/kg

Effects on foetal development Species: Rat
Application Route: Oral
No observed adverse effect level100 mg/kg
Method: OECD
Test No. 421: Reproduction/Developmental Toxicity Screening Test

STOT-single exposure: Not classified

STOT-repeated exposure: Not classified

Repeated dose toxicity:

Species: Rat, male and female
NOAEL: 20 mg/kg
Application Route: by gavage
Exposure time: 28 days
Species: Rat, male and female
NOAEL: 13.5 mg/kg
Application Route: in feed
Exposure time: 2 years

Aspiration toxicity: Not classified

11.5 Zinc Oxide

Acute toxicity: LD50 Oral - mouse - 7,950 mg/kg
LC50 Inhalation - mouse - 2,500 mg/m^3

Skin corrosion/irritation: Skin - rabbit - Mild skin irritation - 24 h

Serious eye damage/irritation: Eyes - rabbit - Mild eye irritation - 24 h
Eyes - rabbit - Mild eye irritation - 24 h

Respiratory or skin sensitization: no data available

Germ cell mutagenicity: Genotoxicity in vitro - Hamster - Embryo
Unscheduled DNA synthesis
Genotoxicity in vitro - Hamster - Embryo
Morphological transformation.
Genotoxicity in vitro - Hamster - Embryo
Sister chromatid exchange
Genotoxicity in vivo - guinea pig - Inhalation
Unscheduled DNA synthesis

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

Reproductive toxicity: No data available

Aspiration hazard: No data available

11.6 Wax

Acute toxicity: LD50 Oral - rat - male and female - > 5,000 mg/kg (OECD Test Guideline 401)
LD50 Dermal - rabbit - > 3,600 mg/kg

Skin corrosion/irritation: Skin - rabbit
Result: No skin irritation - 4 h
(OECD Test Guideline 404)

Serious eye damage/irritation:	Eyes - rabbit Result: No eye irritation - 1 s (OECD Test Guideline 405)
Respiratory or skin sensitization:	Maximisation Test - guinea pig Result: Does not cause skin sensitisation. (OECD Test Guideline 406)
Germ cell mutagenicity:	Ames test S. typhimurium Result: negative
Carcinogenicity:	Carcinogenicity - rat - Implant Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Kidney, Ureter, Bladder:Tumors. 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.
Reproductive toxicity:	No data available
Stot-single exposure:	Not classified
Stot-repeated exposure:	Not classified
Aspiration hazard:	No data available

SECTION 12: Ecological information

General information:

At normal conditions rubber compound is a stable product. The main ingredients polymer is poorly biodegradable but does not pose a hazard to the environment. Additives which have data of ecotoxicological effects are listed.

12.1 Silica

Ecotoxicological Information

EC_0	>1000 ppm (daphnia magna) (24-hour acute immobilization test)-slight to very low toxicity.
EC_0	>10000 ppm (rainbow trout) (4-day static study)- slight to very low toxicity.
EC_0	>10000 ppm (freshwater fish) (96 hour static acute toxicity study) - slight to very low toxicity.

Environmental Fate

When released into the soil, this material is not expected to biodegrade.

When released into water, this material is not expected to

biodegrade.

Environmental toxicity	This material is not expected to be toxic to aquatic life.

12.2 Bis (Triethoxysilylpropyl)Tetrasulfane

Ecotoxicity values	Not applicable.
Persistence and degradability	No data available.
Bioaccumulative potential	No data available.
Mobility	No data available.
Pbt identification	This substance is not identified as a PBT substance.
Other adverse effects	No data available.

12.3 Stearic Acid

Toxicity

Fish	No data available
Crustacea	No data available
Algae	No data available

Mobility In Soil

Log Pow	8.23
Soil adsorption (Koc)	7.2 x 105
Henry's Law constant (PaM3/mol)	4.9 x 10-2

Results of PBT and vPvB assessment

PBT	Not applicable
vPvB	Not applicable
Persistence and degradability	No data available
Bioaccumulative potential	1100000
Other adverse effects	No data available

12.4 Zinc Oxides

Aquatic Toxicity	No further relevant information available
Persistence and degradability	No further relevant information available
Bioaccumulative potential	No further relevant information available
Mobility in soil	No further relevant information available

Ecotoxical effects:

Remark	Very toxic for fish
Additional ecological information	General notes Do not allow product to reach ground water,water bodies or sewage system. Water hazard class 2(self-assessment) hazardous for water. Danger to drinking water if even small quantities leak into soil. Also poisonous for fish and plankton in water bodies. May cause long lasting

harmful effects to aquatic life. Avoid transfer into the environment. Very toxic for aquatic organisms

Results of PBT and vPvB assessment

PBT	Not applicable.
vPvB	Not applicable.

Other adverse effects: No further relevant information available.

12.5 N-1,3-dimethylbutyl-N'-phenyl-p-phenylenediamine

Toxicity

Fish	48h LC50:0.408 mg/L (Oryzias latipes)
Crustacea	No data available
Algae	No data available

Persistence and degradability	2 % (by BOD), 92 % (HPLC)
Bioaccumulative potential	<1.2 - 17 (conc. 6.83 ug/L), <12 - 23 (conc. 0.683 ug/L)

Mobility in soil

Log Pow	5.4
Soil adsorption (Koc)	No data available
Henry's Law constant (PaM3/mol)	No data available

Results of PBT and vPvB assessment

PBT	Not applicable
vPvB	Not applicable

Other adverse effects No data available

12.6 Wax

Toxicity	no data available
Persistence and degradability	no data available
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	no data available

SECTION 13: Disposal considerations

13.1 Waste treatment methods Dispose in accordance with local and national regulations.

Waste water containing rubber should be treated.

Packaging waste (paper bags) shall be collected and send for recycling. Plastic waste shall be removed to disposal. Contaminated packaging should be emptied as far as possible and after appropriate cleaning may be

taken for reuse.

SECTION 14: Transport information

14.1 UN-Number

Not applicable

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing group

Not applicable

14.5 Environmental hazards:

Not applicable

14.6 Special precautions for user

Not applicable

14.7 Transport in bulk according to Annex Ⅱ of MARPOL and the IBC Code Not applicable

SECTION 15:Regulatory information

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

This SDS has been drawn up in compliance with the applicable REACH regulation requirements.
Chemical Safety Report has been performed for monomers: 1,3-butadiene (CAS #106-99-0; EC #203-450-8), styrene (CAS #100-42-5; EC #202-851-5).

15.2 Chemical safety assessment:

A chemical safety assessment has not been carried out, as not required.

SECTION 16: Other information

16.1 Indication of changes

Version 2.0 Amended by (EU) 2015/830

16.2 Abbreviations and acronyms

ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
RID: Regulation for rail international transportation of Dangerous goods
ADN: European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
IMDG: Code international maritime dangerous goods code
ICAO: International Civil Aviation Organization
IATA: International Air Transport Association
LC50: median lethal concentration

EC50: The effective concentration of substance that causes 50% of the maximum response.
NOEC: No Observed Effect Concentration
DNEL: derived no-effect level
PNEC: predicted no-effect concentration

16.3 Key literature references and sources for data
ECHA Guidance on the compilation of safety data sheets

16.4 Classification and procedure used to derive the classification for mixtures according to Regulation (EC) 1272/2008 [CLP]
Classification according to Regulation (EC)No 1272/2008
Classification procedure
Skin Sensitization 1
H317 on basis of test data

16.5 Relevant H-statements (number and full text)
H317: May cause an allergic skin reaction.

16.6 Further information
This information is based on our current level of knowledge. This information may be subject to revision as new knowledge and experience becomes available, and ECOMBINE makes no warranties and assumes no liability in connection with any use of this information.