



SHANDONG WANSHAN CHEMICAL CO., LTD

According to UN GHS (the 8<sup>th</sup> revised edition)

# Material Safety Data Sheet (MSDS)

Product name:	SODIUM NAPHTHALENE SULPHONATE
Model No.:	/

Written by: Linda  
(Linda)

Inspected by: Jose  
(Jose)



Issued by: TUV-Laboratory (China) Service of Testing

Sept. 2019 Print

Initial Date: Sept. 11, 2019

Revision Date: Sept. 11, 2019

# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

## Section 1 - Product and Company Identification

### 1.1. Product Identification

Product name: SODIUM NAPHTHALENE SULPHONATE

Synonyms: NAPHTHALENE SUPERPLASTICIZER

Chemical Name:  $\beta$ -Sodium Naphthalene Sulfonate formaldehyde condensate

CAS No.: 36290-04-7

HS CODE: 38244010

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

Identified uses: Multi-purpose dispersant, suitable for concrete admixtures, agricultural products, synthetic rubber, resin emulsifiers. Widely used in pre-cast & ready-mixed concrete, armored concrete and pre-stressed reinforced concrete in key construction projects such as dam and port construction, road building & town planning projects and dwelling erections etc. Suitable for preparation of early-strength, high-strength, high-anti-filtration and self-sealing & pumpable concrete. Used for and wide for self-cured, vapor-cured concrete and its formulations. At the early stage of application, extremely prominent effects are shown. As the result, the modulus and site utilization can be drastically, the procedure of vapor cure is omitted in peak-heat summer days. Statistically 40-60 metric tons of coal will be preserved when a metric ton of the material is consumed. Compatible with Portland cement, normal Portland cement, Portland slag cement, fly-ash cement and Portland pozzolanic cement etc.

Use advised against: Not available

### 1.3. Details of the manufacturer or applicant

Applicant: SHANDONG WANSHAN CHEMICAL CO., LTD

Address: WANSHAN ROAD, ZHULIU INDUSTRIAL PARK,

CHANGLE COUNTY, WEIFANG CITY, SHANDONG PROVINCE, CHINA, 262404.

Telephone: +86-15095261846

Post code: 262404

E-mail: sales@sdws-chem.cn

### 1.4. Emergency telephone number

Emergency telephone: +86-536-6771798

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)  
E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663  
Fax: 0755-3295 7866





# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

## Section 2 - Hazard Description

Hazard class and label elements of the product according to GHS (the 8<sup>th</sup> revised edition):

2.1. GHS Classification of substance or mixture:

Non-hazardous substance or mixture.

2.2. Label elements:

Hazard pictograms: Not applicable.

Signal word: Not applicable.

Hazard statements: Not applicable.

2.3. Other Hazards: None.

## Section 3 - Composition / Ingredient Data

3.1. Material: Not applicable

3.2. Mixture:

Main effective ingredient: Sodium Naphthalene Sulfonate

Molecular Formula:  $2(C_{10}H_6SO_3Na) \cdot (n-1)CH_2 \cdot (n-2)(C_{10}H_5SO_3Na)$

Chemical Name	CAS #	%(by weight)
SODIUM NAPHTHALENE SULPHONATE	36290-04-7	$\geq 70.5$
SODIUM SULFATE	7757-82-6	$\leq 20.0$
MOISTURE	7732-18-5	$\leq 9.0$
CHLORIDE	16887-00-6	$\leq 0.5$

## Section 4 - First Aid Measures

4.1. General advice:

Show this material safety data sheet to the doctor in attendance. After receiving the first-aid measure required, consult a physician if necessary.

Skin contact:

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)

E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663

Fax: 0755-3295 7866



# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

Remove contaminated clothing and shoes. Wash off with mild soap and plenty of water. If skin irritation occurs or persists, consult a physician immediately.

## Eyes contact:

Check for and remove any contact lenses, do not rubbing eyes with hand. Provide a readily-accessible eyewash facility and quick-drench safety shower. Occasionally lifting the upper and lower eyelids. Immediately flush eyes with running water, disappear until the chemical residues so far. Get medical attention if irritation occurs.

## Inhalation:

Move exposed person to fresh air. Keep person warm and at rest. If not breathing or if breathing is irregular, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention if adverse health effects persist or are severe. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

## Ingestion:

Wash out mouth with water. Move exposed person to fresh air. Keep person warm and at rest. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention if adverse health effects persist or are severe. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

## 4.2. Most important acute and delayed symptoms/effects:

The most important known symptoms and effects are described in section 11.

## 4.3. Immediate / special treatment:

Continue with first aid measures. Treat symptomatically and supportively. Symptoms may be delayed.

## Section 5 – Firefighting Measures

### 5.1. Extinguishing method and extinguishing agent:

Products are not flammable, if this product is involved in a fire:

Suitable extinguishing agents: Use dry sand, dry chemical or CO<sub>2</sub> foam extinguishing. Water spray can

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)  
E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663  
Fax: 0755-3295 7866





# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

be used to cool fire exposed containers/materials. Use extinguishing media most appropriate for the surrounding fire.

Unsuitable extinguishing agents: None.

## 5.2. Special hazards arising from the substance or mixture:

If this product is involved in a fire, the following can be released:

Sodium oxides, carbon oxides, oxychlorides etc.

## 5.3. Fire precautions and measures:

Firefighters must wear self-contained breathing apparatus, wear full body fire suit, fire extinguishing in the upwind. As far as possible will be transferred to empty containers from the scene. Keep the fire water spray container cooling, until the end of fire. If the containers in the fire ground have been color, must be evacuated immediately. Isolated accident scene, prohibit access. Receiving and processing of fire, to prevent environmental pollution.

## Section 6 - Accidental Release Measures

### 6.1. Personal precautions, protective equipment and emergency procedures:

No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilt material, avoid slipping. Avoid breathing dusts, vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see section 8).

### 6.2. Environmental precautions:

Prevent further leakage or spillage if safe to do so. To prevent leak into the water, the basement and limited space. Prevent entry into the sewage system.

### 6.3. Collecting, clearing method and disposal material:

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

Disposal: Contaminated material must be disposed of in accordance with all State and/or Local regulations.

## Section 7 - Handling and Storage

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)  
E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663  
Fax: 0755-3295 7866



# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

## 7.1. Handling precautions:

Put on appropriate personal protective equipment (see section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Avoid contact eyes and skin. Do not ingest. Avoid breathing dust. Normal measures for preventive fire protection. Observe good housekeeping procedures and hygiene practices. Wash thoroughly after handling. Avoid dust formation. Provide for appropriate exhaust ventilation and dust collection at machinery. Handling carefully to prevent damage the packaging and container. Equipped with corresponding varieties and number of fire equipment and spill contingency processing equipment.

## 7.2. Information about protection against explosions and fires:

Non-flammable and non-explosive goods, general rules of fire prevention should be observed. Keep away from open flames, hot surfaces and sources of ignition.

## 7.3. Precautions for storage:

Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10). Moisture-proof and water-proof. Keep out of reach children.

## 7.4. Packaging materials:

Recommended-Use original container.

## Section 8 - Exposure Controls/ Personal Protection

### 8.1. Exposure limit:

There is no known exposure limits prescribed by the state.

### 8.2. Engineering control:

None required. However, use of adequate ventilation is good industrial practice.

### 8.3. Personal protection:

#### Respiratory protection:

Where protection from nuisance le (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

#### Eye protection:

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)  
E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663  
Fax: 0755-3295 7866





# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

Wear safety glasses when there is a potential for eye contact.

## Skin and body protection:

Wear suitable protective clothing.

## Hands protection:

Protective gloves.

Check protective gloves prior to each use for their proper condition.

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer.

## Other protection:

Smoking, eating and drinking water is forbidden in the workplace. After work, shower and change clothes.

## Section 9 - Physical and Chemical Properties

### 9.1. Information on basic physical and chemical properties

Appearance:	Light brown powder
Odor:	Mild
Melting point / freezing point(°C):	No data available/Not applicable
Boiling point(°C):	No data available/Not applicable
Flash point( Closed cup, °C):	No data available/Not applicable
Steam pressure(20°C):	No data available/Not applicable
Relative density (water=1, 20°C):	No data available/Not applicable
Partition coefficient: n-octanol/water:	No data available/Not applicable
Decomposition temperature(°C):	No data available/Not applicable
pH value:	7.95
Explosion limit:	Non-explosive
Vapor density:	No data available/Not applicable

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)  
E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663  
Fax: 0755-3295 7866



# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

Water soluble:	Soluble in water
Auto-ignition temperature:	No data available/Not applicable
Flammability (solid, gas):	Non flammable
Oxidizing properties:	The substance or mixture is not classified as oxidizing

## 9.2. Other safety information

Water reduction rate(%):	18-28
--------------------------	-------

## Section 10 - Stability and Reactivity

### 10.1. Stability:

The product is chemically stable.

### 10.2. Reactivity:

Stable under recommended storage and handling conditions.

### 10.3. Incompatible materials:

Strong oxidizing agents, strong acids and strong bases.

### 10.4. Conditions to avoid:

Incompatible materials, high temperature, water, direct sunlight and open fire.

### 10.5. Hazardous polymerization:

Will not occurs.

### 10.6. Hazardous decomposition products:

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11 - Toxicological Information

### 11.1. Acute toxicity:

Component	CAS No.	LD <sub>50</sub> (Oral)	LD <sub>50</sub> (Dermal)	LC <sub>50</sub> (Inhalation)
SODIUM SULFATE	7757-82-6	Mouse: 5989mg/kg	No data	No data

### 11.2. Skin corrosion/irritation:

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)  
E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663  
Fax: 0755-3295 7866





# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

Prolonged and repeated exposure may cause skin irritation.

## 11.3. Eye corrosion/irritation:

Irritating effect possible.

## 11.4. Respiratory or skin sensitization:

These products are not known to cause human skin or respiratory sensitization.

## 11.5. Germ cell mutagenicity:

According to the existing data, the product is not classified.

## 11.6. Carcinogenicity:

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

## 11.7. Reproductive toxicity:

According to the existing data, the product is not classified.

## 11.8. Specific target organ toxicity - single exposure:

According to the existing data, the product is not classified.

## 11.9. Specific target organ toxicity - repeated exposure:

According to the existing data, the product is not classified.

## 11.10. Aspiration hazard:

According to the existing data, the product is not classified.

## Section 12 - Ecological Information

### 12.1. Ecotoxicity values:

According to the existing data, the product is not classified.

### 12.2. Persistence and degradability:

The products are usually with natural biodegradable.

### 12.3. Bioaccumulative potential:

The potential for bioaccumulation of this material in aquatic organisms is low.

### 12.4. Mobility in soil:

Will penetrate into the soil, will be dissolved in the soil material.

### 12.5. Other adverse effects:

May slightly harmful to water, do not allow material to be released to the environment without proper

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)  
E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663  
Fax: 0755-3295 7866



# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

governmental permits.

## Section 13 - Disposal Considerations

### 13.1. Residual waste:

The generation of waste should be avoided or minimized wherever possible. Recycle landfill.

### 13.2. Contaminated packaging:

The generation of waste should be avoided or minimised wherever possible. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible.

### 13.3. Disposal considerations:

Processing, use or contamination of this product may change the waste management options. Dispose of container and unused contents in accordance with national and local relevant regulations laws.

## Section 14 - Transport Information

According to IATA DGR 60<sup>th</sup> Edition for transportation, IMO International Maritime Dangerous Goods Code (Amendment 39-18), European Agreement Concerning the International Carriage of Dangerous Goods by Road. The products are not subject to IATA DGR, IMDG and ADR/RID.

### 14.1. UN number

ADR, RID, IMDG, IATA: Non-Hazardous for transport

### 14.2. UN proper shipping name

ADR, RID, IMDG, IATA: Non-Hazardous for transport

### 14.3. Transport hazard class(es)

ADR, RID, IMDG, IATA: Non-Hazardous for transport

### 14.4. Packing group

ADR, RID, IMDG, IATA: Non-Hazardous for transport

### 14.5. Environmental hazards

IMDG Marine pollutant: N

### 14.6. Special precautions for user:

Should check whether the container is full, sealed before shipping. Ensure that the product does not

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)  
E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663  
Fax: 0755-3295 7866





# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

collapse, fall, and not damaged in transport process. Transportation should prevent insolation and high temperature and water. Avoid rain, polluted, damaged, long-term exposure. Stopover should be far away from fire, heat source and high temperature and water.

## Section 15 - Regulatory Information

15.1. Regulatory information: Reference to the local, national, US, EU, CA and international regulations.

CAS No.	TSCA	EINECS	DSL	IECSC	NZIoC	PICCS	KECI	AICS
36290-04-7	√	x	√	√	√	√	√	√
7757-82-6	√	√	√	√	√	√	√	√
7732-18-5	√	√	√	√	√	√	√	√
16887-00-6	x	x	x	√	√	x	x	x

TSCA: United States Toxic Substances Control Act Inventory

EINECS: European Inventory of Existing Commercial Chemical Substances

DSL: Canadian Domestic Substances List

IECSC: China Inventory of Existing Chemical Substances

PICCS: Philippines Inventory of Chemicals and Chemical Substances

NZIoC: New Zealand Inventory of Chemicals

KECI: Existing and Evaluated Chemical Substances

AICS: List of existing chemical substances in Australia

Note

"√" Indicates that the substance included in the regulations

"x" That no data or included in the regulations

## Section 16 - Other Information

Version: 1.0

Abbreviations or phrases:

ACGIH : American Conference of Governmental Industrial Hygienists

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)  
E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663  
Fax: 0755-3295 7866



# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

ADR	: European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS	: Chemical Abstracts Service
CLP	: Classification, labeling and packaging
EC	: Council of Europe
ECHA	: European Chemicals Agency
EINECS	: European Inventory of Existing commercial Chemical Substances
GHS	: Globally Harmonized System of Classification and Labelling of Chemicals
IARC	: International Agency for Research on Cancer
IATA	: International Air Transport Association
ICAO	: International Civil Aviation Organization
IMDG	: International Maritime Dangerous Goods Code
IC50	: Inhibitory Concentration 50%
LC50	: Lethal Concentration 50%
LD50	: Median Lethal Dose 50%
MAPROL	: International Convention for the Prevention of Pollution from Ships
REACH	: REGULATION concerning the Registration, Evaluation, Authorization and Restriction of Chemicals
RID	: Regulation for rail International transportation of Dangerous goods
STEL	: Short Term Exposure Limit
TWA	: Time Weighted Average
MAC	: Maximum Allowable Concentration
OSHA	: Occupational Safety and Health Administration
NIOSH	: National Institute for Occupational Safety and Health
TLV	: Threshold Limit Value
TLV-TWA	: Threshold Limit Value-Time Weighted Average

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.

3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)

E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663

Fax: 0755-3295 7866





# Material Safety Data Sheet

MSDS No.: E36.190.912.004.WJB

Client No.: NM36WJB

Product name: SODIUM NAPHTHALENE SULPHONATE

Revision date: Sept. 11, 2019

TLV- STEL	: Threshold Limit Value-Short term Exposure Limit
PC-TWA	: Permissible Concentration-Time Weighted Average
PC-STEL	: Permissible Concentration-Short Term Exposure Limit
PEL	: Permissible Exposure Limit
OELs	: Occupational Exposure Limits

The above information is believed to be correct but we can not guarantee the absolute universality and accuracy and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. The above-named manufacturer and its affiliates shall not be held liable for any damage resulting from handling or from contact with the above product.

TUV-Laboratory ensures the objectivity and fairness of the test and fulfills the confidentiality obligations of the applicant's information. The applicant is responsible for the authenticity of the submitted samples and information. The results shown in this report relate only to the samples tested. The test results only reflect the evaluation of the sample being tested and are not used for other purposes. TUV-Laboratory shall not be liable for any loss arising from or in connection with this report, contract, tort, regulation or other reasons. This report is invalid or has been copied in whole or in part if there is no approver signature and TUV-Laboratory testing special seal. This report may not be published as an advertisement without the approval of the TUV-Laboratory. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is illegal and the offender may be prosecuted to the fullest extent of the law.

Product photo(s)



\*\*\*END OF REPORT\*\*\*

This technical report may only be quoted in full. Any use for advertising purposes must be granted in writing. This report is the result of a single examination of the object in question and is not generally applicable evaluation of the quality of other products in regular production.

TUV-Laboratory (China) Service of Testing Co., Ltd.  
3F, E Block, Huaide Building, Fuyong, Bao'an Dist, Shenzhen

Website: [www.tuv-lab.com](http://www.tuv-lab.com)  
E-mail: [report@tuv-lab.com](mailto:report@tuv-lab.com)

Tel: 4008-553-663  
Fax: 0755-3295 7866

