

SAFETY DATA SHEET

1. Identification of the substance or mixture and of the supplier

A. GHS product identifier : Thermoplastic Vulcanized, INNOPRENE

1350B	1554B	1649B	1870B	5430BM
1350N	1559B	1649N	1870N	5430B-I
1450BK	1600B	1730B	2400B	5431B
1450NK	1640B	1730N	2400N	5700B
1550N	1640BK	1731B	2403B	
1550NE	1640N	1800B	2406B	
1550NK	1640NK	1800N	2500B	
1550B	1641B	1801B	2506B	
1553B	1642B	1830B	5430B	

B. Recommended use of the chemical and restrictions on use

Recommended use : Parts of automobile, Cables, Roofing Sheet, medical, General industrial parts etc.

Restrictions on use : Use for recommended use only.

C. Supplier

Company name : KUMHO POLYCHEM CO., LTD.

Address : #116-46, Weoulha-dong, Yeosu-City, Cheonranam-Do, Korea

Emergency phone number : 82-61-688-2700

Respondent : Quality Assurance Team

Fax : 82-61-688-2899

2. Hazards identification

A. GHS classification of the substance/mixture

Not classified according to OSHA 29 CFR 1910.1200

B. GHS label elements, including precautionary statements

Pictogram and symbol : Not applicable

Signal word : Not applicable

Hazard statements : Not applicable

Precautionary statements

Precaution : Not applicable

Treatment : Not applicable

Storage : Not applicable

Disposal : Not applicable

C. Other hazard information not included in hazard classification (NFPA)

Health : Not available

Flammability : Not available

Reactivity : Not available

3. Composition/information on ingredients

Chemical Name	Common Name(Synonyms)	CAS number	EC number	Content (%)
Carbon black	ACETYLENE BLACK	1333-86-4	215-609-9	Secret
DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC	Hydrotreated (mild) heavy paraffinic distillate	64742-54-7	265-157-1	Secret
Talc (containing no asbestos fibers)	Talc	14807-96-6	238-877-9	Secret

Polypropylene	1-Propene, homopolymer	9003-07-0	618-352-4	Secret
ETHYLENE PROPYLENE- DIENE TERPOLYMER	Not available	25038-36-2	607-505-0	Secret

4. First aid measures

A. Eye contact

- In case of contact with substance, immediately flush eyes with running water at least 20 minutes.

B. Skin contact

- In case of contact with substance, immediately flush skin with running water at least 20 minutes.
- Remove and isolate contaminated clothing and shoes.
- Wash contaminated clothing and shoes before reuse.
- Get immediate medical advice/attention.

C. Inhalation

- Specific medical treatment is urgent.
- Move victim to fresh air.
- Give artificial respiration if victim is not breathing.
- Administer oxygen if breathing is difficult.

D. Ingestion

- Do not let him/her eat anything, if unconscious.
- Get immediate medical advice/attention.

E. Indication of immediate medical attention and notes for physician

- Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

5. Fire-fighting measures

A. Suitable (and unsuitable) extinguishing media

- Suitable extinguishing media: Dry sand, dry chemical, alcohol-resistant foam, water spray, regular foam, CO₂
- Unsuitable extinguishing media: High pressure water streams

B. Specific hazards arising from the chemical

- May be ignited by heat, sparks or flames.
- Containers may explode when heated.
- Some of these materials may burn, but none ignite readily.
- Fire will produce irritating and/or toxic gases.
- If inhaled, may be harmful.

C. Special protective equipment and precautions for fire-fighters

- Dike fire-control water for later disposal; do not scatter the material.
- Move containers from fire area if you can do it without risk.
- Fire involving Tanks; Cool containers with flooding quantities of water until well after fire is out.
- Fire involving Tanks; Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank.
- Fire involving Tanks; Always stay away from tanks engulfed in fire.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures

- Eliminate all ignition sources.
- Stop leak if you can do it without risk.
- Please note that materials and conditions to avoid.
- Ventilate the area.
- Do not touch or walk through spilled material.
- Prevent dust cloud.

B. Environmental precautions and protective procedures

- Prevent entry into waterways, sewers, basements or confined areas.
- C. The methods of purification and removal**
- Small Spill; Flush area with flooding quantities of water. And take up with sand or other non-combustible absorbent material and place into containers for later disposal.
 - Large Spill; Dike far ahead of liquid spill for later disposal.
 - With clean shovel place material into clean, dry container and cover loosely; move containers from spill area.

7. Handling and storage

A. Precautions for safe handling

- Please note that materials and conditions to avoid.
- Wash thoroughly after handling.
- Please work with reference to engineering controls and personal protective equipment.
- Be careful to high temperature.

B. Conditions for safe storage

- Store in a closed container.
- Store in cool and dry place.

8. Exposure controls/personal protection

A. Occupational Exposure limits

Korea regulation

- Carbon black** TWA = 3.5 mg/m³
- Talc (containing no asbestos fibers)** TWA = 2 mg/m³
(Talc-Containing no asbestos fibers respirable)

ACGIH regulation

- Carbon black** TWA 3 mg/m³ (inhalable fraction)
- DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** TWA = 5 mg/m³ (oil mist (mineral))
- Talc (containing no asbestos fibers)** TWA = 2 mg/m³ (Respirable fraction)

Biological exposure index : Not available

OSHA regulation

- Carbon black** TWA = 3.5 mg/m³
- DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** TWA = 5 mg/m³ (oil mist (mineral))
- Talc (containing no asbestos fibers)** TWA = 20 mppcf (Mineral Dusts)

NIOSH regulation

- Carbon black** TWA = 3.5 mg/m³
- DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** TWA = 5 mg/m³ (oil mist (mineral)), STEL = 10 mg/m³ (oil mist (mineral))
- Talc (containing no asbestos fibers)** TWA = 2 mg/m³ (resp)

EU regulation : Not applicable

Other : Not available

B. Appropriate engineering controls

- Provide local exhaust ventilation system or other engineering controls to keep the airborne concentrations of vapors below their respective threshold limit value.

C. Personal protective equipment

Respiratory protection

- Wear NIOSH or European Standard EN 149 approved full or half face piece (with goggles) respiratory protective equipment when necessary.
- In case exposed to particulate material, the respiratory protective equipments as follow are recommended. ;facepiece filtering respirator or air-purifying respirator, high-efficiency particulate air(HEPA) filter media or respirator equipped with powered fan, filter media of use(dust, mist, fume)
- In lack of oxygen(< 19.5%), wear the supplied-air respirator or self-contained breathing apparatus.oxygen

Eye protection

- Wear facepiece with goggles to protect.
- An eye wash unit and safety shower station should be available nearby work place.
- Wear breathable safety goggles to protect from particulate material causing eye irritation or other disorder.
- An eye wash unit and safety shower station should be available nearby work place.

Hand protection

- Wear chemical resistant gloves.
- Wear appropriate protective gloves by considering physical and chemical properties of chemicals.

Body protection

- Wear appropriate protective chemical resistant clothing.
- Wear appropriate protective clothing by considering physical and chemical properties of chemicals.

9. Physical and chemical properties

A. Appearance

Description : Solid(pellet)

Color : Black or Yellowish

B. Odor : Slight odor

C. Odor threshold : Not available

D. pH : Not available

E. Melting point/freezing point : Not available

F. Initial boiling point and boiling range : Not available

G. Flash point : 250 °C

H. Evaporation rate : Not available

I. Flammability (solid, gas) : Not available

J. Upper/lower flammability or explosive limits : Not available

K. Vapor pressure : Not available

L. Solubility (ies) : Solubility in water : Insoluble

M. Vapor density : Not available

N. Specific gravity : 0.90 ~ 1.00

O. Partition coefficient: n-octanol/water : Not available

P. Auto ignition temperature : Not available

Q. Decomposition temperature : 300 °C

R. Viscosity : Not available

S. Molecular weight : 100,000 ~ 600,000

10. Stability and reactivity

A. Chemical stability and Possibility of hazardous reactions:

- Fire may produce irritating and/or toxic gases.
- If inhaled, may be harmful.

B. Conditions to avoid:

- Heat, sparks or flames

C. Incompatible materials:

- Combustibles

D. Hazardous decomposition products:

- Irritating and/or toxic gases

11. Toxicological information

A. Information of Health Hazardous

Acute toxicity

Oral : Not classified

- **Carbon black** : Rat LD₅₀ > 8,000 mg/kg (OECD TG 401)
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : Rat LD₅₀ > 5,000 mg/kg (OECD TG 401, GLP)

Dermal : Not classified

- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : Rabbit LD₅₀ > 2,000 mg/kg (OECD TG 402, GLP)

Inhalation : Not classified

- **Carbon black** : Rat LC₅₀ > 0.005 mg/L/4hr
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : Rat LC₅₀ > 5.53 mg/L/4hr (OECD TG 403)

Skin corrosion/ irritation : Not classified

- **Carbon black** : In test on skin irritation with rabbits, skin irritations were not observed. (OECD TG 404)
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : In test on skin irritation with rabbits, irritant was observed.(GLP)
- **Talc (containing no asbestos fibers)** : A lot of different substances were tested for irritant properties on human skin.

Serious eye damage/ irritation : Not classified

- **Carbon black** : In test on eyes irritation with rabbits, eyes irritations were not observed. (OECD TG 405)
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : In test on eyes irritation with rabbits, eyes irritations were not observed.(OECD TG 405, GLP)
- **Talc (containing no asbestos fibers)** : In eyes irritation test with rabbits, slight eyes irritations were observed.

Respiratory sensitization : Not classified

- **Carbon black** : In respiratory sensitization test with mice, it did not induce respiratory sensitization.
- **Talc (containing no asbestos fibers)** : With the experience of many tens of years of people exposed to talc powder, sensitization effect (asthma, rhinitis, etc.) was never observed.

Skin sensitization : Not classified

- **Carbon black** : In skin sensitization test with guinea pig, it did not induce skin sensitization. (OECD TG 406, GLP)
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : In the test on guinea pigs, the test substance was not considered to be a dermal sensitizer in guinea pigs.(OECD TG 406, GLP)

Carcinogenicity : Not classified

IARC

- **Carbon black** : Group 2B
- **Talc (containing no asbestos fibers)** : Group 3
- **Polypropylene** : Group 3

ACGIH

- **Carbon black** : A3
- **Talc (containing no asbestos fibers)** : A4

KOREA-ISHL

- **Carbon black** : 2

- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : All the solvents listed were non-carcinogenic.(OECD TG 451)

Mutagenicity : Not classified

- **Carbon black** : Negative reactions were observed in both in vitro(Bacterial gene mutation test(OECD TG 471, GLP), Chromosomal aberrations test(OECD TG 476)) and in vivo(DNA damage and/or repair test).
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : In the Mammalian Erythrocyte Micronucleus Test, the result of the assay was negative (OECD TG 474, GLP)

- **Talc (containing no asbestos fibers)** : Negative reactions were observed in vitro (DNA damage and repair assay (GLP), Ames test, chromosomal aberration test) and in vivo (chromosomal aberration test, dominant lethal mutation test).

Reproductive toxicity : Not classified

- **Carbon black** : No adverse effects on the reproductive function are expected.(OECD TG 414)
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : In the toxicity to reproduction test using rat, Reproductive performance was not adversely affected at any dose level evaluated.(OECD TG 421, GLP)
- **Talc (containing no asbestos fibers)** : No teratological effect was observed in hamsters, rats, mice or rabbits following oral administration of talc.

Specific target organ toxicity (single exposure) : Not classified

- **Carbon black** : No effect on endothelins or blood pressure was observed after exposure to carbon black. There were also no effects on body temperature and activity of the animals.
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : In the acute oral toxicity using rat, there were no effects on clinical signs, systemic toxicity.(OECD TG 401, GLP)
- **Talc (containing no asbestos fibers)** : Histopathologic evaluations revealed that numerous rabbits receiving a high dose had talc in the lung, mediastinum, pericardium and liver.

Specific target organ toxicity (repeat exposure) : Not classified

- **Carbon black** : Mice were continuously fed various types of carbon black in massive quantities (10% in diet) for 12 to 18 months. This led to no detectable changes from the normal in the organs and tissues of the mice fed.
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : In the repeated Dose 90-Day Oral toxicity test using rat, there were no effects on clinical signs, mortality NOAEL=125mg/kg.(Read across; heavy paraffinic distillate solvent extract (petroleum))(OECD TG 408)
- **Talc (containing no asbestos fibers)** : Three groups of hamsters (50 male, 50 female) were exposed to an aerosol of talc baby powder. The incidence of alveolar cell hyperplasia was 25% in the groups exposed to aerosol for 30 and 150 min/day for 300 days, compared with 10% in the control group.

Aspiration Hazard : Not available

12. Ecological information

A. Ecological toxicity

- Acute toxicity : Not classified
- Chronic toxicity : Not classified

Fish

- **Carbon black** : 96hr-LC₀ (*Brachydanio rerio*) = 1000 mg/L (OECD TG 203, GLP)
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : 96hr-LC₅₀ > 100 mg/L (OECD TG 203, GLP), 14d-NOELR (*Oncorhynchus mykiss*) > 1000 mg/L (QSAR)
- **Talc (containing no asbestos fibers)** : 24hr-LC₅₀ > 100000 mg/L (GLP)
- **Polypropylene** : Acute toxicity is not classified because of poor solubility (water solubility <1 mg / L) and predicted L(E)C₅₀ exceeding water solubility.

crustacean

- **Carbon black** : 24hr-EC₅₀ (*Daphnia magna*) > 5600 mg/L (OECD TG 202, GLP)
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : 48hr-LC₅₀ > 10000 mg/L (OECD TG 202), 21d-NOEL (*Daphnia magna*) = 10 mg/L (OECD TG 211, GLP)
- **Polypropylene** : Acute toxicity is not classified because of poor solubility (water solubility <1 mg / L) and predicted L(E)C₅₀ exceeding water solubility.

Algae

- **Carbon black** : 72hr-EC₅₀ (*Scenedesmus subspicatus*) > 10000 mg/L , 72hr-NOEC > 10,000mg/L (OECD TG 201, GLP)
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : 72hr-NOEL (*Pseudokirchnerella subcapitata*) ≥ 100 mg/L (OECD TG 201)

- **Polypropylene** : Acute toxicity is not classified because of poor solubility (water solubility <1 mg / L) and predicted L(E)C50 exceeding water solubility.

B. Persistence and degradability

Persistence

- **Polypropylene** : High persistency (log Kow is more than 4 estimated.) (Log Kow = 17.21) (estimated)

Degradability : Not available

C. Bioaccumulative potential

Bioaccumulation

- **Polypropylene** : Bioaccumulation is expected to be low according to the BCF < 500 (BCF = 3.162) (estimated)

Biodegradation

- **Carbon black** : carbon black is an inorganic substance and will not be degraded by microorganisms.
- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : As not well-biodegraded, it is expected to have high accumulation potential in living organisms (= 24% biodegradation was observed after 28 days) (OECD TG 301B, GLP)

D. Mobility in soil

- **Polypropylene** : High potency of mobility to soil. (Koc = 8.633e+014) (estimated)

E. Other hazardous effect : Not available

F. Hazardous to the ozone layer : Not applicable

13. Disposal considerations

A. Disposal method

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

B. Disposal precaution

Consider the required attentions in accordance with waste treatment management regulation.

14. Transport information

A. UN Number : Not applicable

B. UN Proper shipping name : Not applicable

C. Transport Hazard class : Not applicable

D. Packing group : Not applicable

E. Marine pollutant : Not applicable

F. Special precautions

in case of fire : Not applicable

in case of leakage : Not applicable

15. Regulatory information

① **Internal Regulatory information**

U.S.A management information (Section 8(b) Inventory (TSCA)):

- **Carbon black** : Present

- **DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC** : Present

- **Talc (containing no asbestos fibers)** : Present

- **Polypropylene** : Present [XU]

- **ETHYLENE PROPYLENE-DIENE TERPOLYMER** : Present [XU]

U.S.A management information (OSHA Regulation): Not regulated

U.S.A management information (CERCLA Regulation): Not regulated

U.S.A management information (EPCRA 302 Regulation): Not regulated

U.S.A management information (EPCRA 304 Regulation): Not regulated

U.S.A management information (EPCRA 313 Regulation): Not regulated

② Foreign Regulatory Information

KOREA Regulatory information

Occupational Safety and Health Regulation: Not regulated

- Talc (containing no asbestos fibers) : Health examination agent (12months)
- Talc (containing no asbestos fibers) : Work environment monitoring listed (6 months)

Chemical Control Act : Not regulated

- Talc (containing no asbestos fibers) : Prohibited Chemicals (Applicable only to talc that contains asbestos above 1%)

Dangerous Material Safety Management Regulation : Not regulated

- Carbon black : Non-dangerous goods
- DISTILLATES (PETROLEUM), HYDROTREATED HEAVY PARAFFINIC : Petroleum, class 4-4, 6,000 ℓ

External information

Substance of Roterdame Protocol: Not regulated

Substance of Stockholme Protocol Not regulated

Substance of Montreal Protocol: Not regulated

16. Other information

A. Information source and references

U.S. National library of Medicine(NLM) Hazardous Substances Data Bank(HSDB);
<http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?HSDB>
Emergency Response Guidebook 2008;
http://phmsa.dot.gov/staticfiles/PHMSA/DownloadableFiles/Files/erg2008_eng.pdf
EPISUITE v4.1; <http://www.epa.gov/opt/exposure/pubs/episuitedl.htm>
National Emergency Management Agency-Korea dangerous material inventory management system;
<http://www.nema.go.kr/hazmat/main/main.jsp>
Korea Occupational Health & Safety Agency; <http://www.kosha.net>
Eastman Chemical Company SDS
IARC Monographs on the Evaluation of Carcinogenic Risks to Humans; <http://monographs.iarc.fr>
National Chemicals Information System; <http://ncis.nier.go.kr/ncis/>
TOMES-LOLI® ; <http://www.rightanswerknowledge.com/loginRA.asp>
Waste Control Act enforcement regulation attached [1]
The Chemical Database -The Department of Chemistry at the University of Akron;
<http://ull.chemistry.uakron.edu/erd/>
U.S. National library of Medicine(NLM) Chemical Carcinogenesis Research Information System(CCRIS); <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?CCRIS>
[guidechem](http://www.guidechem.com); <http://www.guidechem.com>
National Toxicology Program; http://ntp-apps.niehs.nih.gov/ntp_tox/index.cfm
American Conference of Governmental Industrial Hygienists TLVs and BEIs.
NIOSH Pocket Guide; <http://www.cdc.gov/niosh/npg/npgdcas.html>
REACH information on registered substances : <http://apps.echa.europa.eu/registered/registered-sub.aspx#search>
EU CLP; <http://esis.jrc.ec.europa.eu/index.php?PGM=cla>
REACH information on registered substances; <http://apps.echa.europa.eu/registered/registered-sub.aspx>
UN Recommendations on the transport of dangerous goods 17th
International Uniform Chemical Information Database(IUCLID); <http://esis.jrc.ec.europa.eu/>

B. Issuing date : 03. May. 2010

C. Revision number and date

revision number : 5

date of the latest revision : 20. Apr. 2017

D. Others

- This SDS is authored in pursuant to the OSHA 29 CFR 1910.1200.
- The content is based on the latest information and knowledge that we currently possess.
- This SDS was authored to aid buyer, processor or any other third person who handles the chemical of subject in the SDS; additionally, it does not warrant suitability of the chemical for special purposes or the commercial use of statements that approves the use of it in combination with other chemicals as

well as technical or legal liabilities.

- The content of the SDS may vary depending on the country or the region and may not coincide with the actual regulations. Therefore, the buyer or the processor of the chemical is responsible for observing responsible government's or the region's regulations.