SAFETY DATA SHEET
NdBR-40

According to Regulation (EU) No 453/2010

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Product name NdBR-40

REACH Registration number -

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

Identified uses Raw materials for tires, shoes, rubber hoses

Uses advised against No specific uses advised against are identified.

1.3. Details of the supplier of the safety data sheet

Supplier

OR of KOREA KUMHO Petrochemical Co., Ltd.
KIST Europe Forschungsgesellschaft mbH
Campus E71
66123 Saarbruecken
Germany
Tel: +49 681 9382 334
Fax: +49 681 9382 319
e-mail: reach.it@kist-europe.de

Manufacturer

Korea Kumho Petrochemical Co., Ltd.
287-1, Pyeongyeo-Dong, Yeosu-si
Jeollanam-do, Korea
+82 61 688 3060 ~ 9
+82 61 688 3168

1.4. Emergency telephone number

+49 551 19240
GIZ-Nord, Goettingen, Germany (English only)

SECTION 2: HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

Classification (EC 1272/2008)

Physical and Chemical Hazards	Not classified.
Human health	Not classified.
Environment	Aquatic Chronic 3 - H412

Classification (1999/45/EEC) R52/53.

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

2.2. Label elements

Contains BHT

Polybutadiene

Label In Accordance With (EC) No. 1272/2008

No pictogram required.

Hazard Statements

H412	Harmful to aquatic life with long lasting effects.

Precautionary Statements

P273	Avoid release to the environment.
P501	Dispose of contents/container to …

2.3. Other hazards

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.2. Mixtures

BHT		**< 1%**
CAS-No.: 128-37-0	**EC No.: 204-881-4**	
Classification (EC 1272/2008) Aquatic Acute 1 - H400 Aquatic Chronic 1 - H410	Classification (67/548/EEC) N;R50/53.	

Polybutadiene		**60-100%**
CAS-No.: 9003-17-2	**EC No.:**	
Classification (EC 1272/2008) Not classified.	Classification (67/548/EEC) Not classified.	

The Full Text for all R-Phrases and Hazard Statements are Displayed in Section 16.

REACH Registration number -

SECTION 4: FIRST AID MEASURES

4.1. Description of first aid measures

General information

Get medical attention.

Inhalation

Move the exposed person to fresh air at once.

If respiratory problems, artificial respiration/oxygen.

Ingestion

Consult a physician for specific advice.

Do not give victim anything to drink if he is unconscious.

Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs.

Skin contact

Continue to rinse for at least 15 minutes.

Promptly wash contaminated skin with soap or mild detergent and water. Promptly remove clothing if soaked through and wash as above.

Get medical attention if irritation persists after washing.

Eye contact

Continue to rinse for at least 15 minutes and get medical attention. Continue to rinse for at least 15 minutes.

4.2. Most important symptoms and effects, both acute and delayed

General information

Not available.

Inhalation.

Not available.

Ingestion

Not available.

Skin contact

Not available.

Eye contact

Not available.

4.3. Indication of any immediate medical attention and special treatment needed

Treatment may vary with condition of victim and specifics of incident.

SECTION 5: FIREFIGHTING MEASURES

5.1. Extinguishing media

Extinguishing media

Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

5.2. Special hazards arising from the substance or mixture

Hazardous combustion products

During fire, toxic gases (CO, CO2) are formed.

Unusual Fire & Explosion Hazards

Fire causes formation of toxic gases. Heat may cause the containers to explode.

Specific hazards

When heated and in case of fire, irritating vapours/gases may be formed. Vapours may be ignited by a spark, a hot surface or an ember.

5.3. Advice for firefighters

Special Fire Fighting Procedures

Fight advanced or massive fires from safe distance or protected location. Move container from fire area if it can be done without risk. For massive fire in cargo area, use unmanned hose holder or monitor nozzles, if possible. If not, withdraw and let fire burn out. Keep up-wind to avoid fumes. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. Avoid heat, flames and other sources of ignition.

Protective equipment for fire-fighters

Use personal protective equipment as required.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

Wear protective clothing as described in Section 8 of this safety data sheet. Avoid inhalation of vapours and contact with skin and eyes. Keep upwind. Evacuate area. Keep away from sources of ignition - No smoking. Do not handle broken packages without protective equipment. Put on protective equipment before entering danger area.

6.2. Environmental precautions

Do not discharge into drains, water courses or onto the ground. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

6.3. Methods and material for containment and cleaning up

Large Spillages: Build dikes to control spillage. Avoid lowland and keep upwind. Environmental manager must be informed of all major spillages. Collect spillage in containers, seal securely and deliver for disposal according to local regulations. Small Spillages: Collect spilled material in appropriate container for disposal. Wash thoroughly after dealing with a spillage.

6.4. Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

7.1. Precautions for safe handling

For personal protection, see section 8. Avoid contact with skin and eyes. Wash thoroughly after handling. Keep separated from incompatible substances.

7.2. Conditions for safe storage, including any incompatibilities

Protect against direct sunlight. Do not store near heat sources or expose to high temperatures. Static electricity and formation of sparks must be prevented. Keep away from combustible materials. Store in accordance with local regulations.

7.3. Specific end use(s)

The identified uses for this product are detailed in Section 1.2.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1. Control parameters

Name	STD	TWA - 8 Hrs		STEL - 15 Min		Notes
BHT	ACGIH		2 mg/m3			

ACGIH = American Conference of Governmental Industrial Hygienists.

Ingredient Comments

No exposure limits noted for ingredient(s).

8.2. Exposure controls

Protective equipment



Process conditions

Use engineering controls to reduce air contamination to permissible exposure level. Provide eyewash, quick drench.

Engineering measures

Provide adequate ventilation, including appropriate local extraction, to ensure that the defined occupational exposure limit is not exceeded.

Respiratory equipment

Under frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use.
When take shelter:
- Dust, mist, fume-purifying respiratory protection
- Any air-purifying respirator with a corpuscle filter of high efficiency
- Any respiratory protection with a electromotion fan (for dust, mist, fume-purifying)
- High-efficiency particulate filter respirator attached self-service protector

For Unknown Concentration or Immeddiately Dangerous to Life or Health:
- Self-contained breathing apparatus (pressure-demand or other positive-pressure mode in combination)
- Supplied-air respirator with full facepiece.

Hand protection

Wear appropriate chemical resistant gloves. PVC or rubber gloves are recommended.

Eye protection

Wear approved safety goggles. Wear safety glasses with side-shields conforming to EN166.

Skin protection

Wear appropriate chemical registant clothing.

Environmental Exposure Controls

Avoid releasing to the environment.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

Appearance	Solid
Colour	Yellow white
Odour	Mild.
Solubility	Insoluble in water

Initial boiling point and boiling range

Not applicable.

Melting point (°C)

Not applicable.

Relative density	0.91 20 °C

Vapour density (air=1)

Not applicable.

Vapour pressure

Not applicable.

Evaporation rate

Not available.

pH-Value, Conc. Solution

Not applicable.

Viscosity

Not applicable.

Decomposition temperature (°C)

Not applicable.

Odour Threshold, Lower

Not available.

Odour Threshold, Upper

Not available.

Flash point

Not applicable.

Auto Ignition Temperature (°C)	316°C

Flammability Limit - Lower(%)

Not available.

Flammability Limit - Upper(%)

Not available.

Partition Coefficient (N-Octanol/Water)

Not applicable.

Explosive properties

Not applicable.

Other Flammability

Not available.

Oxidising properties

Not available.

9.2. Other information

Mol. Weight 600, 000

SECTION 10: STABILITY AND REACTIVITY

10.1. Reactivity

Not available.

10.2. Chemical stability

Stable under normal temperature conditions and recommended use.

10.3. Possibility of hazardous reactions

Will not occur.

10.4. Conditions to avoid

Temperatures above 50 ºC. Oxidising materials. Avoid dust close to ignition sources. Avoid exposure to high temperatures or direct sunlight.

10.5. Incompatible materials

Materials To Avoid

Acid anhydrides. Acid chlorides (Acyl chlorides). Acids, bases, oxidizing agents. Metal or metallic Copper. Stainless steel.

10.6. Hazardous decomposition products

Carbon monoxide (CO). Carbon dioxide (CO_2). Irritating and toxic fumes, smoke, and gas.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1. Information on toxicological effects

Acute toxicity:

Acute Toxicity (Oral LD50)

Not available.

Acute Toxicity (Dermal LD50)

Not available.

Acute Toxicity (Inhalation LC50)

Not available.

Skin Corrosion/Irritation:

Not available.

Serious eye damage/irritation:

Not available.

Respiratory or skin sensitisation:

Respiratory sensitisation

Not available.

Skin sensitisation

Not available.

Germ cell mutagenicity:

Genotoxicity - In Vitro

Not available.

Genotoxicity - In Vivo

Not available.

Carcinogenicity:

Not classified to be carciogenic substance (A1) and carciogenic substance of presumed (A2) in Public notice. Antioxidant (BHT): IARC group 3, ACGIH group 4

Reproductive Toxicity:

Reproductive Toxicity - Development

Not relevant

Specific target organ toxicity - single exposure:

STOT - Single exposure

Not available.

Specific target organ toxicity - repeated exposure:

STOT - Repeated exposure

Not available.

Aspiration hazard:

Not available.

Toxicological information on ingredients.

Polybutadiene (CAS: 9003-17-2)

Skin Corrosion/Irritation:

Cause irritation of the skin. (source : HSDB)

Serious eye damage/irritation:

Cause irritation of the eyes. (source : HSDB)

Respiratory or skin sensitisation:

Cause irritation of the respiratory tract. (source : HSDB)

BHT (CAS: 128-37-0)

Acute toxicity:

Acute Toxicity (Oral LD50)

> 6000 mg/kg Rat

Acute Toxicity (Dermal LD50)

> 2000 mg/kg Rat

Acute Toxicity (Inhalation LC50)

Endpoint waived according to REACH Annex VII, IX or XI.

Skin Corrosion/Irritation:

Non-irritant (rabbit)

Serious eye damage/irritation:

Not Irritating.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity

The product is not expected to be hazardous to the environment.

12.1. Toxicity

Acute Toxicity - Fish

Not available.

Acute Toxicity - Aquatic Invertebrates

Not available.

Acute Toxicity - Aquatic Plants

Not available.

Acute Toxicity - Microorganisms

Not available.

Chronic Toxicity - Fish Early life Stage

Not available.

Short Term Toxicity - Embryo and Sac Fry Stages

Not available.

Chronic Toxicity - Aquatic Invertebrates

Not available.

Acute Toxicity - Terrestrial

Not available.

Ecological information on ingredients.

BHT (CAS: 128-37-0)

Acute Toxicity - Fish

LC50 96 hours 0.199 mg/l
(Calculated from QSAR approach)

Acute Toxicity - Aquatic Invertebrates

EC50 48 hours 0.77 mg/l Daphnia magna

Acute Toxicity - Aquatic Plants

EC50 96 hours 0.758 mg/l
(Calculated from QSAR approach)

Acute Toxicity - Microorganisms

EC50 1.7 mg/l
Exposure duration : 24hr

Toxicity to soil:

Endpoint waived according to REACH Annex VII, IX or XI.

Toxicity to terrestrial plants:

Endpoint waived according to REACH Annex VII, IX or XI.

12.2. Persistence and degradability

Not available.

Degradability

Not available.

Phototransformation

Not available.

Stability (Hydrolysis)

Not available.

Biodegradation

Not available.

Ecological information on ingredients.

BHT (CAS: 128-37-0)

Phototransformation

Air. Half-life: 0.585 days

Biodegradation

Water and Sediment
Endpoint waived according to REACH Annex VII, IX or XI.
Soil Degradation (77~92%) 1 days

12.3. Bioaccumulative potential

Bioaccumulation factor

Not available.

Partition coefficient

Not applicable.

Ecological information on ingredients.

BHT (CAS: 128-37-0)

Bioaccumulation factor

BCF 598.4

12.4. Mobility in soil

Mobility:

Not available.

Henry's Law Constant

Not available.

Ecological information on ingredients.

BHT (CAS: 128-37-0)

Adsorption/Desorption Coefficient

log Koc 4.362

Calculated using PCKOCWIN v1.66 model.

Henry's Law Constant

8.928E-005 atm m3/mol

Calculated using HENRYWIN v3.10 model.

12.5. Results of PBT and vPvB assessment

This product does not contain any PBT or vPvB substances.

12.6. Other adverse effects

Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

General information

Dispose of waste and residues in accordance with local authority requirements. Waste is suitable for incineration. If the waste contains designated waste and difficult to separate, incinerate it or reduce the volume following the similar way as incineration. If applicable, pretreat the waste by oil/water separation.

13.1. Waste treatment methods

Confirm disposal procedures with environmental engineer and local regulations. Dispose of the waste by oneself or contact disposal company.

SECTION 14: TRANSPORT INFORMATION

General The product is not covered by international regulation on the transport of dangerous goods (IMDG, IATA, ADR/RID).

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

Environmentally Hazardous Substance/Marine Pollutant

No.

14.6. Special precautions for user

Not applicable.

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not applicable.

SECTION 15: REGULATORY INFORMATION

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

Water hazard classification

Contains 2, 6-Di-tert-butyl-4-methylphenol showing WGK 1. 2, 6-Di-tert-butyl-4-methylphenol is regulated by DFG as carcinogen category 4, pregnancy risk group C.

15.2. Chemical Safety Assessment

No chemical safety assessment has been carried out.

SECTION 16: OTHER INFORMATION

Abbreviations and acronyms used in the safety data sheet

Precautionary Statements In Full.
P501 Dispose of contents/container in accordance with local/regional/national/international regulation. HSDB : Hazardous Substance Data Bank

Issued By	KIST Europe
Safety Data Sheet Status	Approved.
Date	27.05.2014

Risk Phrases In Full

R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

Hazard Statements In Full

H412	Harmful to aquatic life with long lasting effects.
H410	Very toxic to aquatic life with long lasting effects.
H400	Very toxic to aquatic life.