

Material Safety Data Sheet  
( GHS-MSDS )

HANIL CHEMICAL IND. CO., LTD.

# Material Safety Data Sheet

Name of Material		Cobalt Borate Neodecanoate Complexes	
CAS NO	KE NO	UN NO	EC NO
68457-13-6	KE-06073	3077	270-601-2

## 1. Information related to chemical products and company

- A. Product name : HBC-23 (Cobalt borate neodecanoate complexes)
- B. Recommended use of product and restrictions on use
- Recommended use : No data
  - Restrictions on use : No data
- C. Manufacturer/Supplier/Distributor Information
- Name of supply company : Hanil Chemical Ind. Co., Ltd.
  - Address : 37, Gongdan 1-daero, Jeongwang-dong, Siheung-si, Gyeonggi-do  
(Sihwa Industry Complex 1-na 803)
  - Information provision service or emergency contact telephone number :  
031-499-8201-4 (FAX 031-499-8207)
  - Corresponding department : Quality assurance department

## 2. Hazard risk

- A. Classification of hazard risks
- Acute toxicity (oral) : Classification 4
- Skin hypersensitiveness : Classification 1
- Reproductive toxicity : Classification 2
- Chronic aquatic environment toxicity : Classification 2
- B. Warning label items including precautionary statements
- Pictorial symbol



○ Signal word :           Warning

○ Hazard and risk phrases

- H302       Harmful when ingested
- H317       May cause allergic skin reactions
- H361       Suspected of damaging a fetus or reproductive ability
- H411       Toxic to aquatic organisms due to long-term effects

○ Precautionary statements

– Prevention

- P201       Obtain the instruction manual before use.
- P202       Do not handle before all safety precautions have been read and understood.
- P261       Do not inhale (dust, fume, gas, mist, vapor, and spray).
- P264       Wash the handled part thoroughly after handling.
- P270       Do not eat, drink, or smoke when using this product.
- P272       Do not remove contaminated clothing outside of the work area.
- P273       Do not release into the environment.
- P280       Wear (protective gloves, protective clothing, protective goggles, and a face mask).

– Response

- P301+P312 When feeling uncomfortable after ingestion, receive a medical examination from a medical institution (medical doctor).
- P302+P352 Wash with a large amount of soap and water in the case of contact with skin.
- P308+P313 If exposed or concerned about exposure, seek medical treatment and advice.
- P321       In the case of feeling discomfort, receive a medical examination from a medical institution (medical doctor).
- P330       Wash your mouth.
- P333+P313 When skin irritation or a red spot occurs, seek medical treatment and advice.
- P362+P364 Remove contaminated clothing and wash again before reuse.
- P391       Collect leaked material.

– Storage  
P405 Store in a storage location with a locking device.

– Disposal  
P501 (According to the content specified in the relevant legislations) Dispose of the content container.

C. Other hazards and risks not included in classification standards for hazards and risks (NFPA)

– Sanitation 1  
– Fire No data  
– Reactivity No data

### 3. Name and content of constituents

A. Chemical name : Cobalt borate neodecanoate complexes

B. Synonym (common name) : HBC-23

C. Chemical formula :  $(C_9H_{19}COOC_o-O-)_3B$

D. Molecular weight : 749.38

E. Content (%) : 100% ( Co 23.4%, B 1.4%, O<sub>2</sub> 6.4%, Organic Acid 68.8% )

F. CAS NO : 68457-13-6

### 4. Emergency measures

A. Contact in eye : Receive emergency medical treatment  
When contact with materials, immediately wash skin and eye for more than 20 minutes with running water

B. Contact with skin : Receive emergency medical treatment  
Wash contaminated clothing before using again  
In the case of hot materials, dip the affected part in a large amount of water to remove heat  
When in contact with materials, immediately wash skin and eye for more than 20 minutes with running water  
When skin irritation or a red spot occurs, seek medical treatment and advice.

C. When inhaled : If exposed or concerned about exposure, seek medical

treatment and advice

Move to a place with fresh air.

Supply oxygen if breathing is difficult.

Perform artificial respiration in the case of not breathing

D. When ingested : If exposed or concerned about exposure, seek medical treatment and advice

Wash your mouth

E. Other precautions by medical doctors :

Medical workers should be aware of the corresponding material and take protective measures

In case of exposure, contact the medical staff and take emergency measures such as follow-up treatments

## 5. Measures in case of explosion and fire

A. Appropriate (inappropriate) extinguishing agent :

Use alcohol foams, carbon dioxide or water sprays upon extinguishment related to this material.

Use dry sand or dirt upon extinguishment by smothering

B. Specific hazards occurring from chemical substances :

When heating, the container may explode It may decompose at high temperature to generate toxic gas

Inhalation of the substance may be harmful

Inhalation of asbestos may damage the lungs

Vapor that may cause dizziness and

suffocation may be generated in some liquids

Parts may burn but do not easily ignite

In case of contact, skin and eye may be damaged by burning

Upon fire, irritating, corrosive, or toxic gas may be generated

C. Protective equipment and precautions for fire fighting :

Rescuers should wear appropriate protective equipment

Dig a ditch for the disposal of fire water and move the container away from the fire area if it is not dangerous

Be careful because parts may be transported at high temperature

Escape from the area, maintain a safe distance, and extinguish

In case of tank fire, even after extinguishment is completed, cool the container with a large amount of water

In case of tank fire, when there is a high-pitched sound in the pressure relief device or the tank becomes discolored, immediately move away

In case of tank fire, move away from the tank which is inflamed

## 6. Measures for leakage accidents

### A. Measures and protective equipment necessary for protection of body :

Avoid inhaling (dust, fume, gas, mist, vapor, and spray)

Do not touch exposure water or walk on the water

Prevent the formation of dust

Immediately wipe spilled items, and follow preventive measures in the section for protective equipment

Stop leakage if not dangerous

Be careful of substances and conditions to avoid

### B. Measures necessary for protecting the environment :

Exposure water may cause contamination

Prevent inflows into waterway, sewer, basement, and sealed space

Do not release into the environment.

### C. Purification or removal method :

Collect spillage

In the case of leakage of a large amount, make a ditch far away from liquid leakage

In the case of powder leakage, cover with a plastic sheet to prevent spreading and maintain in a dry condition.

Absorb spillage of inert materials (for example, dry sand or earth) and place in chemical waste containers

In the case of leakage of a small amount, absorb with inflammable substances and place in a container

Absorb the liquid and wash the contaminated area with a detergent and water

Place the spillage in a clean and dry container with a clean shovel, and after loosely closing the container, move the container out of the area of leakage

## 7. Handling and storage methods

A. Safety handling : Avoid inhaling (dust, fume, gas, mist, vapor, and spray)

Carefully open the cap before opening

Be careful of high temperatures

Do not handle until all safety precautions have been read and understood

Use by being cautious about handling/storage

Since product residues may remain after emptying the container, follow all MSDS/label preventive measures

Do not eat, drink, or smoke when using this product

Do not remove contaminated clothing outside the work area

Avoid long-term or continuous skin contact

Do not enter the storage area unless adequate ventilation is available

Wash the handled part thoroughly after handling

Use by being cautious about handling/storage

Note the materials and conditions to avoid

B. Safe storage method : The empty drum should be completely drained and properly blocked to return to the drum controller or appropriately position

Stay away from food and drink

Store in a storage location with a locking device.

Note the materials and conditions to avoid

## 8. Exposure prevention and personal protective equipment

A. Exposure standards of chemical compounds, biological exposure standards, etc.

Domestic standards : No data

ACGIH standards : No data

Biological exposure standards : No data

B. Appropriate engineering controls

Use process isolation or local exhaust ventilation, or implement other engineering controls to regulate air levels below exposure limits

Install eyewash equipment and safety shower for equipment for storing or using this material

C. Personal protective equipment

- Respiratory protection : Wear respiratory protective equipment for physical and chemical properties of the exposed particulate matter, which has been certified by Korea Occupational Safety and Health Agency.
- Eye Protection : No data
- Hand Protection : No data
- Body Protection : No data

9. Physical and Chemical Property

A. Appearance	State : solid
	Color : purple
B. Scent	No data
C. Scent threshold	No data
D. pH	No data
E. Melting point/freezing point	125°C
F. Initial boiling point and range of boiling points	No data
G. Flash point	No data
H. Evaporation rate	No data
I. Flammability (solid, gas)	No data
J. Upper/lower limit of ignition or explosion range	No data
K. Vapor pressure	No data
L. Solubility	1897.9 mg/ l ((20°C)(OECD Guideline 105, GLP))
M. Vapor density	1.22 ((22.2°C)(OECD Guideline 109))
N. Specific gravity	No data
O. n-Octanol/water distribution coefficient	No data



P. Spontaneous combustion temperature	No data
Q. Decomposition temperature	No data
R. Viscosity	No data
S. Molecular weight	749.38

## 10. Stability and reactivity

A. Chemical stability and possibility of hazardous reaction :

It may produce toxic gas by decomposition at high temperature  
The container may explode upon heating  
Parts may burn but do not easily ignite  
In case of contact, skin and eye may be damaged by burning  
Upon fire, irritating or toxic gas may be generated  
Inhalation of the material may be harmful

B. Conditions to avoid : Heat

C. Materials to avoid : No data

D. Hazardous material generated during decomposition : Irritating and toxic gas

## 11. Information related to toxicity

A. Information related to exposure path with high possibility : No data

B. Health hazard information

Acute toxicity

Oral : LD50 1098 mg/kg Rat (OECD Guideline 425 GLP)

Percutaneous : LD50 > 2000 mg/kg Rabbit (no death reported)  
(OECD Guideline 402 GLP(Read across CAS 1308-06-1)

Inhalation : No data

- Skin corrosiveness or irritation : As a result of skin corrosiveness/irritation tests using rabbits, irritation not observed (OECD Guideline 404 GLP)
- Severe eye damage or irritation : Non-corrosive/non-irritating material (OECD Guideline 437 GLP)
- Respiratory hypersensitiveness : No data
- Skin hypersensitiveness : As a result of local lymph node tests using mice (female), skin hypersensitiveness was observed (Read across CAS 91789-51-3)

○ Carcinogenicity :

Occupational Safety and Health Act	No data
Notice of Ministry of Employment and Labor	No data
IARC	No data
OSHA	No data
ACGIH	No data
NTP	No data
EU CLP	No data

○ Reproductive cell mutagenicity : In vitro chromosome aberration test results were negative (Readacross CAS 10124-43-3), in vitro mammalian cell gene mutation results (OECD Guideline 476 GLP(Read across CAS 10124-43-3), and in vivo chromosome aberration test results were negative

○ Reproductive toxicity : Development (when administered at 48 mg/kg, mortality of babies/pups increased, and at all dosages, weight was reduced, and under exposure at 24 or 48 mg/kg, average weight, body length, and tail length decreased) of pups was affected by having toxic effects on the maternal line throughout the late gestational period and the lactation period

○ Specific target organ toxicity (single exposure) : No data

○ Specific target organ toxicity (repeated exposure) : Mother line toxicity occurred due to cobalt usage under oral exposure of 0, 20, 100, and 200 mg/kg bw cobalt surface everyday during the gestational period of 6-520 days in rabbits (female)

○ Absorption hazards : No data

○ Other hazardous effects : No data

## 12. Impact on the environment

### A. Ecotoxicity

- Fish : EC50 48 mg/ℓ 96 hr other(Pimephales promelas, similar material CAS 77646-79-9) ※ Source : ECHA
- Crustacean : LC50 1492 mg/ℓ 48 hr Ceriodaphnia dubia (similar material CAS 7676-79-9) ※ Source : ECHA
- Bird : No data

### B. Persistence and degradability

- Persistence : No data
- Degradability : No data

### C. Bioaccumulation

- Accumulation : No data
- Biodegradability : 3.46 (%) 28 hr (OECD Guideline 301 B GLP)  
※ Source : ECHA

D. Soil mobility : No data

E. Other hazardous effects : No data

## 13. Precautions for disposal

A. Disposal method : No data

B. Precautions for disposal : (According to the content specified in the relevant legislations) Dispose of the content container

## 14. Information necessary for transport

A. UN No. : 3077

B. Proper shipment name : Environmentally hazardous material (solid)(Not specified in Attached Table 1 and including those specified in Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal )(ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N. O. S.)

C. Hazard class for transport : 9

D. Container grade : III

E. Marine pollutant: Applicable (MP)

F. Special safety measures that users need to know regarding transport or transportation means or are necessary

- Emergency measures at the time of fire: F-A
- Emergency measures at the time of leakage: S-A

## 15. Information of applicable regulations

A. Regulations by the Occupational Safety and Health Act :	Not applicable
B. Regulations by the Toxic Chemicals Control Act :	Not applicable
C. Regulations by the Safety Control of Dangerous Substances Act :	Not applicable
D. Regulations by the Wastes Control Act :	Not applicable
E. Other regulations by domestic or overseas legislations	
Domestic regulations	
Act on Control of Persistent Organic Pollutants :	Not applicable
Overseas regulations	
US control information (OSHA standards):	Not applicable
US control information (CERCLA standards):	Not applicable
US control information (EPVRA 302 standards)	Not applicable
US control information (EPCRA 304 standards)	Not applicable
US control information (EPCRA 313 standards)	Not applicable
US control information (Rotterdam Convention material)	Not applicable
US control information (Stockholm Convention material)	Not applicable
US control information (Montreal Protocol material)	Not applicable
EU classification information (confirmed classification result)	Not applicable
EU classification information (hazardous phrases)	Not applicable
EU classification information (safety phrases)	Not applicable

## 16. Other references

A. Source of data
Alibaba (phase)
Alibaba (color)
ECHA Chem(E. melting point/freezing point)
ECHA Chem(L. solubility)
ECHA Chem(M. vapor density)
ECHA (Oral)
ECHA (Percutaneous)
ECHA (Skin corrosiveness or irritation)
ECHA (Severe eye damage or irritation)
ECHA (Skin hypersensitiveness)
ECHA (Reproductive cell mutagenicity)

ECHA (Reproductive toxicity)  
ECHA (Specific target organ toxicity (repeated exposure))  
ECHA (Fish)  
ECHA (Crustacean)  
ECHA (Biodegradability)  
Korea Occupational Safety and Health Agency  
KOSHANET (Safety Health Information Service)

- B. ○ This material safety data sheet (MSDS) is prepared by reconstructing materials provided by Korea Occupational Safety and Health Agency in accordance with “preparation and posting of MSDS by business owner” of Article 41 of the Occupational Safety and Health Act for the protection of the health of workers in the GHS-MSDS form according to the situation of Hanil Chemical Ind. Co., Ltd.
- This MSDS is used as educational material on the safety and healthy of workers in the corresponding work place in accordance with Article 41 of the Occupational Safety and Healthy Act and is prohibited for commercial use.
- Using this MSDS for external purposes can be punished according to related legislations such as the Copyright Act, etc.

C. Revision history

- Originally created : 2001
- Number of revisions : 9
- Last revision date : 2017. 10. 23.

- End -