

Sodium Cyanide

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 2015/830)

Page 1 of 10
First Issue : Dec. 1, 2010
Revised : June. 20, 2017
(Revised No. : 7)
SDS No. : TS-003(EU)

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Substance name : Sodium Cyanide
EC Number : 205-599-4
CAS Number : 143-33-9
REACH Pre-Registration Number : 05-2114703701-61-0011

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

Synthesis of Chemical and Pharmaceutical Intermediates
Formulation of Chemical Products
Cleaning and Degreasing in Metal Finishing Industries
Depressing Agent
Extraction Agent of Precious Metals
Recycling of Precious Metals
Electroplating
Metal Hardening

1.3 Details of the supplier of the safety data sheet

Only Representative:

Name : Envigo Research Ltd
Address : Shardlow Business Park,
London Road, Shardlow, Derbyshire, DE72 2GD
United Kingdom
Telephone number : +44 (0)1332 792896
E-mail : ORR-UK@envigo.com

Non-Community manufacturer :

Company : Tongsuh Petrochemical Corp., Ltd.
108-70, Sapyeong-ro, Nam-gu,
Ulsan, 44785
Republic of Korea
Telephone number : +82-2-3215-0721
Telefax number : +82-2-3215-0770
E-mail address : tspcmail@tspc.co.kr

1.4 Emergency telephone number

+82 - 52 - 259 - 7691 Tongsuh Petrochemical Corp., Ltd. (Republic of Korea)
+82 - 52 - 260 - 0774

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No. 1272/2008 [CLP/GHS]

Corrosive to metals, Category 1, H290
Acute toxicity - oral, Category 1, H300
Acute toxicity - dermal, Category 1, H310
Acute toxicity - inhalation, Category 1, H330
Acute aquatic toxicity, Category 1, H400

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 2015/830)

Page 2 of 10
First Issue : Dec. 1, 2010
Revised : June. 20, 2017
(Revised No. : 7)
SDS No. : TS-003(EU)

Specific target organ toxicity – repeated exposure, Category 1, H372

2.2 Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 [CLP]

Hazard Pictograms



Signal word : Danger

Hazard statements:

H290 May be corrosive to metals.
H300 Fatal if swallowed.
H310 Fatal in contact with skin.
H330 Fatal if inhaled.
H372 Causes damage to organs through prolonged or repeated exposure. (See Section 11.)
H400 Very toxic to aquatic life.

EUH032: Contact with acids liberates very toxic gas.

Precautionary statements:

1) Prevention

P234 Keep only in original container.
P260 Do not breathe dust/fume/gas/mist/vapours/spray.
P262 Do not get in eyes, on skin, or on clothing.
P264 Wash hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves / protective clothing / eye protection / face protection.
P284 Wear respiratory protection.

2) Response

P301+P310 IF SWALLOWED : immediately call a POISON CENTER or doctor / physician.
P302+P352 IF ON SKIN : wash with plenty of soap and water.
P304+P340 IF INHALED : remove victim to fresh air and keep at rest in a position comfortable for breathing.
P310 Immediately call a POISON CENTER or doctor/physician.
P314 Get medical advice/attention if you feel unwell.
P320 Specific treatment is urgent
P321 Specific treatment
P322 Specific measures
P330 Rinse mouth.
P361 Remove/Take off immediately all contaminated clothing.
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
P391 Collect spillage.

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 2015/830)

Page 3 of 10
First Issue : Dec. 1, 2010
Revised : June. 20, 2017
(Revised No. : 7)
SDS No. : TS-003(EU)

3) Storage

P403+P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

P406 Store in corrosive resistant container with a resistant inner liner.

4) Disposal

P501 Dispose of contents/container in accordance with local/regional/national/international regulation

2.3 Other hazards

All known hazards are described by this Safety Data Sheet.

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substance

Substance name: Sodium Cyanide

EC Number: 205-599-4

CAS Number: 143-33-9

Purity: >98 wt%

Impurities or other constituents contributing to substance classification: Not applicable

4. FIRST AID MEASURES

4.1 Description of first aid measures

Inhalation

Immediately remove from exposure.

Give amyl nitrile inhalation, 1 ample (0.2ml) every 5 minutes.

If breathing has stopped or is depressed, give oxygen.

Get medical attention immediately.

Skin contact

Immediately remove the contaminated clothing and shoes from the victim.

Immediately wash affected area thoroughly with soap or mild detergent and plenty of water.

Seek medical attention immediately.

Eye contact

Immediately and gently flush the affected eye(s) well with plenty of clean water, occasionally lifting upper and lower lids. Seek medical attention immediately.

Ingestion

Induce vomiting by giving lukewarm water or dilute sodium chloride solution.

If the victim is unconscious, never give anything by mouth and seek medical attention immediately.

4.2 Most important symptoms and effects, both acute and delayed

First aider needs to protect himself.

Sodium Cyanide irritates severely the eye, the skin and the respiratory tract.

Reddening of the eyes or skin, Nausea, Headache, Breathing difficulties, Palpitation, Weakness of arms and/ or legs.

Sodium Cyanide may cause effects on the cellular respiration, resulting in convulsions and unconsciousness.

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 2015/830)

Page 4 of 10
First Issue : Dec. 1, 2010
Revised : June. 20, 2017
(Revised No. : 7)
SDS No. : TS-003(EU)

4.3 Indication of any immediate medical attention and special treatment needed

Check that decontamination of patient is complete before treating.

If patient is conscious, lucid and able to communicate, then significant poisoning may not have occurred.

An oximeter can be used by appropriately trained staff to monitor blood gases until trained medical help arrives.

Exposed personnel should be transferred to the hospital and monitored for continuing symptoms.

Shortness of breath, "air hunger", gasping respiration or feelings of suffocation are symptoms of exposure.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Sodium Cyanide itself is incombustible.

Unsuitable extinguishing media

Do not use water jet.

5.2 Special hazards arising from the substance or mixture

No data available.

5.3 Advice for fire fighters

Wear self-contained breathing apparatus and protective suit.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Evacuate personnel to safe areas.

Keep unnecessary personnel away.

Use suitable protective equipment (See Section 8 "Exposure Controls / Personal Protection").

Do not enter scene without proper Personal Protective Equipment.

6.2 Environmental precautions

Avoid release to the environment.

Do not let the material get into the public sewage system.

Do not use neutralization agent to try and neutralize cyanide contaminated rivers, streams of other waterways.

6.3 Methods and material for containment and cleaning up

Collect in a suitable container.

Shovel or sweep up.

Do not flush with water.

After cleaning, flush away traces with water.

6.4 Reference to other sections

Refer to Section 8 for personal protective equipment, Section 13 for disposal information, and Section 15 for Release Reporting information, if applicable.

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 2015/830)

7. HANDLING AND STORAGE**7.1 Precautions for safe handling**

Always have on hand a cyanide first-aid kit, together with proper instructions.
Use suitable protective equipment (See Section 8 "Exposure Controls/Personal Protection").
Do not ingest.
Do not get in eyes, on skin or on clothing.
Use only with adequate ventilation.
Keep container closed.
After contact with skin, wash immediately with plenty of water.

7.2 Conditions for safe storage, including any incompatibilities

Store in a place accessible by authorized persons only.
Keep locked up. Keep container tightly closed in a dry and well-ventilated place.

7.3 Specific end uses(s)

No data available.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION**8.1 Control parameters**

Occupational exposure limits

Country	Exposure Limit	Legal Basis
ACGIH(USA)	STEL-C 5 mg/m ³ skin	2016
Spain	VLA-EC 5 mg/m ³ skin	2011

Occupational exposure limits and/or biological limits for air contaminants
None established

Workers

DNEL/DMEL

Acute - systemic Effects -Dermal 3.0 mg/kg bw/day
Acute - systemic Effects -Inhalation 9.4 mg/m³
Long term - systemic Effects Dermal 0.102 mg/kg bw/day
Long-term - systemic Effects - Inhalation 0.72 mg/m³

8.2 Exposure controls

Recommended Monitoring Procedures:

Personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.

Appropriate engineering controls

Handle only in totally enclosed systems.
Provide exhaust ventilation or other engineering controls to keep the relevant airborne concentrations below their respective occupational exposure limits.
Use explosion-proof ventilation equipment.
Ensure that eyewash stations and safety showers are close to the workstation location.

Individual protection measures, such as personal protective equipment (PPE)

Personal Protective Measurers

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 2015/830)

Page 6 of 10
First Issue : Dec. 1, 2010
Revised : June. 20, 2017
(Revised No. : 7)
SDS No. : TS-003(EU)

Eye/face Protection:

Do not get in eyes.
Wear chemical splash safety goggles.
Wear full face respirator for eye protection if exposures are likely to exceed the Short Term Exposure Limit or significant liquid splash potential exists.
Ensure that eyewash stations and safety showers are close to the workstation location.
A respirator is not needed under normal and intended conditions of product use as defined under Engineering Controls.

Skin Protection:

Do not get on skin or clothing.
Wash thoroughly after handling.
Ensure that eyewash stations and safety showers are close to the workstation location.

Hands:

Wear gloves that cannot be penetrated by chemical or oil.
The correct choice of protective gloves depends upon the chemicals being handled, the conditions of work and use, and the condition of the gloves (even the best chemically resistant glove will break down after repeated chemical exposures).
Most gloves provide only a short time of protection before they must be discarded and replaced.
Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application.
Gloves should therefore be chosen in consultation with the supplier/manufacturer and with a full assessment of the working conditions.

Respiratory Protection:

Use only with adequate ventilation.
Wear special protective clothing and a full face respirator or a positive pressure, self-contained breathing apparatus(SCBA). Keep container closed.

Other protection:

Ensure that eyewash stations and safety showers are close to the workstation location.

Hygiene Measures:

Wash hands after handling this material and before eating, smoking, using lavatory and at the end of the day.
Ensure that eyewash stations and safety showers are close to the workstation location.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Appearance(state, color) : Solid(white)
Odour : none
pH : 11-12 (20g/l water)
Melting/freezing point : 564°C
Boiling point : 1496 °C
Flash point : Not applicable
Vapour pressure : 133kPa (at 817°C)
Relative density : 1.595 (at 20°C)
Solubility : 58g/l at 20°C in water
Partition coefficient;
n-octanol/water : Not applicable

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 2015/830)

Page 7 of 10
First Issue : Dec. 1, 2010
Revised : June. 20, 2017
(Revised No. : 7)
SDS No. : TS-003(EU)

Auto-ignition temperature : Not applicable
Viscosity : No data
Explosive properties : Not applicable
Oxidizing properties : Not applicable

9.2 Other information

Not available

10. STABILITY AND REACTIVITY

10.1 Reactivity

Not reactive under normal handling and storage.

10.2 Chemical stability

Stable under recommended storage and handling conditions (See Section 7 : Handling and Storage)
Decomposes slowly on exposure to water.

10.3 Possibility of hazardous reactions

Decomposes slowly on exposure to water.
Contact with acids liberates very toxic gas.

10.4 Conditions to avoid

Hydrogen cyanide forms if heated above 300°C

10.5 Incompatible materials

Acids, strong oxidizing agents, water.

10.6 Hazardous decomposition products

Hydrocyanic acid

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:

Acute Oral Toxicity LD50 rat 4.7 mg/kg

LD50 rat 6.44 mg/kg

Acute Dermal Toxicity LD50 rabbit 14.6 mg/kg

LD50 mouse 10.0 mg/kg

Acute Inhalation Toxicity LC50 rat 0.015 mg/L.

Chronic exposure: Exposure to low levels of cyanide compounds over long periods of time, is reported to cause loss of appetite, headache, weakness, nausea, dizziness.

Skin Irritation/corrosivity: Contact with aqueous solution or solid on moist skin may cause redness pain, burns, contact dermatitis and ulcers which are slow to heal.

Serious eye irritation/damage: May cause irritation or injury.

Respiratory Sensitisation: Not available

Skin Sensitisation: May cause sensitization by skin contact.

Germ Cell Mutagenicity: Animal testing did not show any mutagenic effects.

Carcinogenicity: Animal testing did not show any carcinogenic effects.

Reproductive Toxicity: Not toxicity to reproduction.

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 2015/830)

Page 8 of 10
First Issue : Dec. 1, 2010
Revised : June. 20, 2017
(Revised No. : 7)
SDS No. : TS-003(EU)

Specific target organ toxicity (single exposure):	Not available
Specific target organ toxicity (repeated exposure):	Causes damage to organs(central nervous system, testis, kidney, adrenal gland, spleen) through prolonged or repeated exposure.
Aspiration hazard:	Not available

11.2 Other Information

Routes of Exposure: Dermal, eye, inhalation and ingestion

Potential Health Effects:

Excessive exposures may affect human health, as follows

Eye Contact:	Severe irritation, Burn, Excessive lachrymation, Blurred vision, Damage, Systemic toxicity.
Skin Contact:	Discomfort, Rash, Severe irritation, Burn, Systemic toxicity.
Inhalation:	Headache, Dizziness, Nausea, Weakness, Shortness of breath, Lowered blood pressure, Unconsciousness, Convulsions, Fatality.
Ingestion:	Shortness of breath, Lowered blood pressure, Unconsciousness, Convulsions, Fatality.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to Fish 96-hour LC50 0.08~0.12 mg/L (Sheepshead minnow).

Toxicity to Crustacean 48-hour LC50 0.09 mg/L (Daphnia magna)

12.2 Persistence and degradability

Inherently biodegradable (ECHA)

Neutralization is normally necessary before waste water is discharged into water treatment plants.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No data available.

12.5 Results of PBT and vPvB assessment

Sodium cyanide is not considered to be persistent, bioaccumulating nor toxic.

Sodium cyanide is not considered to be very persistent nor very bioaccumulating.

12.6 Other adverse effects

Not data available.

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Dispose of contents/container in accordance with local/regional/national/international regulations.

Avoid contact of spilled material and runoff with soil and surface waterways.

Consult an environmental professional to determine if local, regional or national regulations would classify spilled or contaminated materials as hazardous waste.

Use only approved transporters, recyclers, treatment, storage or disposal facilities.

Comply with all local, regional and national laws pertaining to waste management.

SAFETY DATA SHEETAccording to Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 2015/830)Page 9 of 10
First Issue : Dec. 1, 2010
Revised : June. 20, 2017
(Revised No. : 7)
SDS No. : TS-003(EU)**13.2 Consult your local or regional authorities.**

Chemical additions, processing or otherwise altering this material may make waste management information presented in the SDS incomplete, inaccurate or otherwise inappropriate.

14. TRANSPORT INFORMATION

	14.1 UN Number	14.2 UN Proper Shipping Name	14.3 Hazard Class(s)	14.4 Packing Group	14.5 Environmental Hazards
EU ADR/RID	1689	Sodium cyanide, solid	6.1	I	–
IMDG	1689	Sodium cyanide, solid (Sodium Cyanide)	6.1	I	Marine Pollutant
ICAO/IATA	1689	Sodium cyanide, solid	6.1	I	–

14.6 Special precautions for user

Do not store with acids. (danger of toxic gases)

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

Not available

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

EU regulations

REACH, CLP, SEVESO.

Other regulations

Please refer to any other national measures that may be relevant.

15.2 Chemical safety assessment

A chemical safety assessment has been performed

16. OTHER INFORMATION**16.1 Classification information**

NOTICE: This Material Safety Data Sheet is based upon data considered to be accurate at the time of its preparation. Despite our efforts, it may not be up to date or applicable to the circumstances of any particular case. We are not responsible for any damage or injury resulting from abnormal use, from any failure to follow appropriate practices or from hazards inherent in the nature of the product.

16.2 Further information

This Safety Data Sheet has been prepared in accordance with Commission Regulation (EU) No [2015/830](#).

The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification.

SAFETY DATA SHEET

According to Regulation (EC) No 1907/2006 (REACH), Annex II
(COMMISSION REGULATION (EU) No 2015/830)

Page 10 of 10
First Issue : Dec. 1, 2010
Revised : June. 20, 2017
(Revised No. : 7)
SDS No. : TS-003(EU)

Information relates only to the specific material and processes designated in the text and may not be valid for other materials or processes.

Responsibility cannot be accepted for damage or injury resulting from hazards inherent to the product, from abnormal use, or from failure to follow appropriate practices.

16.3 Indication of changes

Revision Indicator:

Only Representative was changed.

Some of GHS classification were changed.