

Material Safety Data Sheet

ELEC FINE INSTRUMENTS CO, LTD
2-31-5 CHUO, NAKANO-KU, TOKYO, JAPAN

Identity: SOLUTION K-82

Specification of material:

Classification of Single or Mixture material : Mixture material

Re : Chemical composition, Ingredients and Chemical formula

Chemical name	Nickel chloride 6 solution	Boric acid	Sodium chloride	Water
Ingredients & Content	24%	2%	4%	70%
Chemical composition	NiCl ₂ ·6H ₂ O	H ₃ BO ₃	NaCl	H ₂ O
Official gazette No.	1-242	1-63		
CAS No.	7718-54-9	10043-35-3		
UN Classification	6.1			
UN Number	3288			
Specific gravity	3.52	1.435		
Molecular weight	94.14	61.83		

Classification of danger · harm:

Danger

Danger harmful is low.

Harmful point

When it is inhaled or swallowed, vomiting, diarrhea, stomachache, body temperature become low, create the stomach and intestines problem, etc.

If it is swallowed big quantity, creating a shock or affect to the central nervous system.

Name of classification: Toxic material

First aid

If it is inhaled	Take the sufferer immediately to a fresh air area and lie quietly with keep the body warm. Get a treatment by a medical doctor.
When attached on skin	Immediately take off clothes, shoes, etc. and wash away the solution attached part with sufficient water. Get a treatment by a medical doctor.
When entered in eye	Wash with sufficient water more than 15 minutes. After washing the eyes get treatment by a medical doctor immediately. When washing eyes, open the lid of an eye with fingers and wash enough with water. (Better to remove contact lens.)
When swallowed by mistake	Immediately wash a mouth with sufficient water, and then drink plenty of water and if possible make vomit. Get a treatment by a medical doctor immediately.

In case of a fire how to take measures:

Extinguish method	Cut the origin of a fire and extinguish with an appropriate extinguisher. In case of a fire occurred around the solution keeping area, shifting the solution to a safe place. If it is difficult to shift, sprinkle sufficient water around the container. Wearing protection clothes is a must.
Extinguish chemicals	Carbon dioxide, powdered extinguisher, bubble extinguisher.

Leakage happened

Evacuate the people from vicinity. When removing the material, work from windward, with wearing protection eye eyeglasses, protection groves and mask. Remove the solution by sand to absorb or dilute it with water and neutralize by adding alkali such as saltpeter ashes, soda ashes, baking soda, etc. Then, wash it away with sufficient water.

Attention for usage and keeping:

Usage	Don't put into a mouth. Wearing appropriate protection clothes or apparatus and avoid the material is not attaching to eyes, skin, clothes, etc. After handling this solution, please wash hands sufficiently.
Safekeeping	Avoid direct sunshine, and keep at well-ventilated dark and cool place.

Exposure prevention installation

Installation measure : For indoor use, sealing the source of occurrence or keep good ventilation.
Protection goods : In accordance with condition, wear gas mask, protection eye glasses, and protection gloves.
Permissible consistency : Japan Industrial Sanitation Institute (Year 2004 edition):
ACGIH (Year edition): 0.1mg/m² (as Ni)
Control consistency : Not set up.

9. Physical / chemistry

Appearance, etc.: Green color liquid
Melting point : –
Boiling point : –
Density : –
Molecular weight: –
Solubility : Dissolve into water, alcohol.

10. Stability and Safety

The ignition point: Non inflammable
The firing point : Non inflammable
Limit of explosion: Non inflammable
For a normal use, it is stable.

11. Information for harmful point

Affect on skin : –
Stimulation : Stimulate eyes and skin.
Sensitizing : Repeatedly use or touching many hours, sometimes skin become sensitivity.
Acute toxicity : Rat oral administration LD50: 105 mg/kg (Nickel chloride)
 Rat oral administration LD50: 2660 mg/kg(Boric acid)
 Rat oral administration LD50: 1400 mg/kg(Boric acid)
 Rat oral administration LD50: 1330 mg/kg(Boric acid)
Cause of cancer : ARC is classified as the first number group (Cause of cancer property for people).
Variation protozoa: Colon bacillus 17000ppm/24h
Toxicity for reproduction: –
Teratogen : –

12. Information for environment influence

Resolvability :. –
Accumulative : –
Toxicity for fish : –
In some case, it is harmful for environment, so please handle with careful attention.

13. Remarks for disposal

Since this material is applicable to the regulation of water pollution prevent (living environment item) and the sewer regulation (restriction on sewage removal), don't discharge the material as it is for river, drainage, etc.

In case of not handle the drain by user, ask industrial waste disposal agent.

This material is not applicable to a special control of industrial wastes.

14. Caution for transportation

Confirm the container has no leakage problem.

At the shipment, don't upset, drop, and not to get damage. Also, protect properly for a load fall down.

15. Applicable laws and regulations

Work health (hygiene) Act : -

Toxic substance and poison regulation law : -

Fire fighting law : -

16. The others

Quoted from a literature

Estimation for danger · harm are not entirely sufficient, so please pay a special attention for handling.