Material Safety Data Sheet

acc. to ISO/DIS 11014

Printing date 02/11/2009 Reviewed on 02/11/2009

1 Identification of substance

Product details

Trade name: **NXG1 Sn96.5Ag3.0Cu0.5**
Application of the substance / the preparation: Solder paste

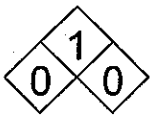
Manufacturer/Supplier:
Kester
800 W. Thorndale Ave.
Itasca, IL 60143
Tel.(847) 297-1600
Fax.(847) 390-9338

Information department:
MSDS Coordinator
e-mail: msds@kester.com
Tel. (847) 699-5755

2 Hazards identification

WHMIS Hazard Symbols
D2A - Very toxic material causing other toxic effects

Information pertaining to particular dangers for man and environment:
The product has to be labelled due to the calculation procedure of international guidelines.
May cause sensitisation by inhalation and skin contact.
NFPA ratings (scale 0 - 4)



Health = 0
Fire = 1
Reactivity = 0

HMIS-ratings (scale 0 - 4)

HEALTH	*0
FIRE	1
REACTIVITY	0

*Health = *0*
Fire = 1
Reactivity = 0

GHS label elements

Danger

3.4/1 - May cause allergy or asthma symptoms or breathing difficulties if inhaled.
3.4/1 - May cause an allergic skin reaction.
Prevention:
Avoid breathing dust/fume/gas/mist/vapours/spray.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of inadequate ventilation wear respiratory protection.

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Response:
IF ON SKIN: Wash with plenty of soap and water.
IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
Specific treatment (see label).
If skin irritation or rash occurs: Get medical advice/attention.
If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.
Wash contaminated clothing before reuse.
Disposal:
Dispose of contents/container in accordance with local/regional/national/international regulations.

3 Composition/Data on components

Chemical characterization
Description: *Mixture of the substances listed below with nonhazardous additions.*

Dangerous components:			
7440-31-5	tin		50-100%
144413-22-9	Denatured Acid Hydrogenation Gum Resin	Danger: 3.4.R/1, 3.4.S/1	2.5-10%
65997-06-0	Modified Rosin	Danger: 3.4.R/1, 3.4.S/1	2.5-10%
7440-22-4	silver		2.5-10%
112-73-2	bis(2-butoxyethyl) ether	Danger: 3.1.D/3; 3.3/1	≤ 2.5%
112-59-4	2-(2-hexyloxyethoxy)ethanol	Danger: 3.1.D/3; 3.3/1	≤ 2.5%
7440-50-8	copper		≤ 2.5%

4 First aid measures

After inhalation: *Supply fresh air; consult doctor in case of complaints.*
After skin contact: *Immediately wash with water and soap and rinse thoroughly.*
After eye contact: *Rinse opened eye for several minutes under running water.*
After swallowing: *Seek immediate medical advice.*

5 Fire fighting measures

Suitable extinguishing agents:
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
Special hazards caused by the material, its products of combustion or resulting gases:
In case of fire, the following can be released:
Carbon monoxide (CO)
Carbon dioxide (CO2)
Aliphatic aldehydes
Protective equipment: *Wear self-contained respiratory protective device.*

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6 Accidental release measures

Person-related safety precautions: *Ensure adequate ventilation*
Measures for environmental protection: *Do not allow to enter sewers/ surface or ground water.*
Measures for cleaning/collecting:
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

7 Handling and storage

Handling:
Information for safe handling: *Prevent formation of aerosols.*
Information about protection against explosions and fires: *No special measures required.*

Storage:
Requirements to be met by storerooms and receptacles: *Store at 0-10oC in a dry location.*
Information about storage in one common storage facility: *Not required.*
Further information about storage conditions: *None.*

8 Exposure controls and personal protection

Additional information about design of technical systems: *No further data; see item 7.*

Components with limit values that require monitoring at the workplace:	
7440-31-5 tin	
PEL	*2 mg/m³* *metal*
REL	*2 mg/m³*
TLV	*2 mg/m³* *metal*
7440-22-4 silver	
PEL	*0.01 mg/m³*
REL	*0.01 mg/m³*
TLV	*0.1 mg/m³* *metal*
7440-50-8 copper	
PEL	*1* 0.1** mg/m³* *as Cu *dusts and mists **fume*
REL	*1* 0.1 R** mg/m³* *as Cu *dusts and mists **fume*
TLV	*Short-term value: 0.1** mg/m³* *Long-term value: 1* 0.2** mg/m³* *dusts and mists; **fume; as Cu*

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Additional information:
PEL = Permissible Exposure Limit (OSHA)
REL= Recommended Exposure Limit (NIOSH)
TLV= Threshold Limit Value (ACGIH)
OSHA= Occupational Safety and Health Administration
ACGIH= American Conference of Governmental Industrial Hygienists
NIOSH= National Institute for Occupational Safety and Health

Personal protective equipment:
General protective and hygienic measures:
The usual precautionary measures for handling chemicals should be followed.
Keep away from foodstuffs, beverages and feed.
Immediately remove all soiled and contaminated clothing.
Wash hands before breaks and at the end of work.
Breathing equipment:
When ventilation is not sufficient to remove fumes from the breathing zone, a safety approved respirator or self-contained breathing apparatus should be worn.
Protection of hands:

Protective gloves

Material of gloves:
Nitrile rubber, NBR
Natural rubber, NR
Penetration time of glove material:
The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.
Eye protection:
Safety glasses

Tightly sealed goggles

9 Physical and chemical properties

General Information

Form:	*Pasty*
Color:	*Silver grey*
Odor:	*Mild*

Change in condition
Melting point/Melting range: *Undetermined.*
Boiling point/Boiling range: *244°C (471°F)*

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Flash point: *101°C (214°F)*

Auto igniting: *Product is not selfigniting.*

Danger of explosion: *Product does not present an explosion hazard.*

Density at 20°C (68°F): *>4 g/cm³*

Solubility in / Miscibility with
Water: *Not miscible or difficult to mix.*

Solvent content:
Organic solvents: *2.3 %*

Solids content: *96.4 %*

10 Stability and reactivity

Thermal decomposition / conditions to be avoided: *No decomposition if used according to specifications.*
Materials to be avoided: *Strong acids, strong oxidizers.*
Dangerous reactions *No dangerous reactions known.*
Dangerous products of decomposition:
Carbon monoxide and carbon dioxide
When heated to soldering temperatures, the solvents are evaporated and rosin may be thermally degraded to liberate aliphatic aldehydes and acids.

11 Toxicological information

Acute toxicity:

LD/LC50 values that are relevant for classification:		
65997-06-0 Modified Rosin		
Oral	*LD50*	*> 4000 mg/kg (Rat)*
Dermal	*LD50*	*>2500 mg/kg (rabbit)*
112-73-2 bis(2-butoxyethyl) ether		
Oral	*LD50*	*3900 mg/kg (rat)*

Primary irritant effect:
on the skin: Possible local irritation by contact with flux or fumes.
on the eye: Smoke during soldering can cause eye irritation.
Sensitization:
Sensitization possible through inhalation.
Sensitization possible through skin contact.
Additional toxicological information:
The product shows the following dangers according to internally approved calculation methods for preparations:
Harmful

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Irritant

12 Ecological information

General notes:
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

13 Disposal considerations

Product:
Recommendation:
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.
Disposal must be made according to official regulations.

Uncleaned packagings:
Recommendation: *Disposal must be made according to official regulations.*

14 Transport information

DOT regulations:
Hazard class: -

Land transport ADR/RID (cross-border):
ADR/RID class: -

Maritime transport IMDG:
IMDG Class: -
Marine pollutant: *No*

Air transport ICAO-TI and IATA-DGR:
ICAO/IATA Class: -
UN "Model Regulation": -

15 Regulations

USA The following information relates to product regulation specific to the USA.

SARA (Superfund Amendments and Reauthorization Act)

Section 355 (extremely hazardous substances):
None of the ingredient is listed.

Section 313 (Specific toxic chemical listings):	
7440-22-4	*silver*

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112-73-2	bis(2-butoxyethyl) ether
112-59-4	2-(2-hexyloxyethoxy)ethanol
122-99-6	2-Phenoxyethanol
7440-50-8	copper

TSCA (Toxic Substances Control Act):	
7440-31-5	tin
144413-22-9	Denatured Acid Hydrogenation Gum Resin
65997-06-0	Modified Rosin
7440-22-4	silver
112-73-2	bis(2-butoxyethyl) ether
112-59-4	2-(2-hexyloxyethoxy)ethanol
57675-44-2	9-Octadecenoic acid (Z)-, 2-ethyl-2-[[(1-oxo-9-octadecenyl)oxy]methyl]-1,3-propanediyl ester, (Z)-
122-99-6	2-Phenoxyethanol
7440-50-8	copper
55349-01-4	octadecanamide, N,N'-1,6-hexenediylbis[12-hydroxy-]-
8001-78-3	Hydrogenated Castor Oil
102-06-7	1,3-diphenylguanidine
124-04-9	adipic acid
104-68-7	Diethylene glycol monophenyl ether
3234-02-4	2,3-dibromo-2-butene-1,4-diol

California Proposition 65

Chemicals known to cause cancer:
None of the ingredients is listed.

Chemicals known to cause reproductive toxicity:
None of the ingredients is listed.

Carcinogenicity categories

EPA (Environmental Protection Agency)		
7440-22-4	silver	D
7440-50-8	copper	D

IARC (International Agency for Research on Cancer)
None of the ingredients is listed.

NTP (National Toxicology Program)
None of the ingredients is listed.

NIOSH-Ca (National Institute for Occupational Safety and Health)
None of the ingredients is listed.

OSHA-Ca (Occupational Safety & Health Administration)
None of the ingredients is listed.

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CANADA: The following information relates to product regulation specific to Canada.

Workplace Hazardous Materials Identification (WHMIS):
This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

EUROPEAN UNION
The following information relates to product regulation specific to the directives of the European Union.

Risk phrases:
May cause sensitisation by inhalation and skin contact.

Safety phrases:
Keep out of the reach of children.
Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer).
Avoid contact with skin.
Wear suitable gloves.
In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
Dispose of this material and its container to hazardous or special waste collection point.
In case of accident by inhalation: remove casualty to fresh air and keep at rest.

16 Other information

The information contained herein is based on data considered accurate and is offered solely for information, consideration and investigation. Kester extends no warranties, makes no representations and assumes no responsibilty as to the accuracy, completeness or suitability of this data for any purchaser's use. The data on this Material Safety Data Sheet relates only to this product and does not relate to use with any other material or in any process. All chemical products should be used only by, or under the direction of, technically qualified personnel who are aware of the hazards involved and the necessity for reasonable care in handling. Hazard communication regulations require that employees must be trained on how to use a Material Safety Data Sheet as a source for hazard information.

Abbreviations and acronyms:
ADR: Accord européen sur le transport des marchandises Dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
RID: Reglement internationale concernent le transport des merchandises dangereuses par chemin de fer (Regulations Concerning the International Transport of Dangerous Goods by Rail)
IMDG: International Maritime Code for Dangerous Goods
DOT: US Department of Transportation
IATA: International Air Transport Association
IATA-DGR: Dangerous Goods Regulations by the "International Air Transport Association" (IATA)
ICAO: International Civil Aviation Organization
ICAO-TI: Technical Instructions by the "International Civil Aviation Organization" (ICAO)
GHS: Globally Harmonized System of Classification and Labelling of Chemicals
NFPA: National Fire Protection Association (USA)
HMIS: Hazardous Materials Identification System (USA)
WHMIS: Workplace Hazardous Materials Information System (Canada)
LC50: Lethal concentration, 50 percent
LD50: Lethal dose, 50 percent