Inventec Performance Chemicals USA, LLC
SAFETY DATA SHEET (SDS)

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Amtech Core Wire 4300, No-Clean (NC), Rosin Active (RA), Rosin Mildly Active (RMA), Water Washable (WS)
SYNONYMS: Core Wire, Solder Wire

MANUFACTURER: Inventec Performance Chemicals USA, LLC
ADDRESS: PO Box 989 Deep River, CT 06417 USA
PHONE: 860-526-8300
FAX: 860-526-8243
EMERGENCY: Infotrac-(800)535-5035

REVISION DATE: December 19, 2014
REVISION NUMBER: 3
DOCUMENT NAME: SDS-Core Wire-011

PRODUCT USE: Soldering components for bonding semiconductor chips and packages to circuit boards

SECTION 2: HAZARDS IDENTIFICATION

CHEMICAL NAME: N/A
CHEMICAL FAMILY: Inorganic Metals
CHEMICAL FORMULA: N/A

ROUTES OF ENTRY: Inhalation, Ingestion, Skin/Eye Contact

GHS:

Signal Word: Warning

Signal Word: Warning

Signal Word: Warning

Hazard statement(s)

H302	Harmful if swallowed
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H333	May be harmful if inhaled
H335	May cause respiratory irritation
H336	May cause drowsiness or dizziness
H351	Suspected of causing cancer (lead)
H360	May damage fertility or the unborn child (lead)
H373	May cause damage to organs through prolonged or repeated exposure (lead containing products)
H410	Toxic to aquatic life (lead)
H413	May cause long lasting harmful effects to aquatic life

Precautionary statement(s)

P102	Keep out of reach of children
P261	Avoid breathing dust/fume/gas/mist/vapors/spray
P270	Do not eat, drink, or smoke when using this product
P280	Wear protective gloves/protective eye protection/face protection
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: If breathing is difficult, remove person to fresh air and keep comfortable for breathing
P305 + P351	IF IN EYES: Rinse continuously with water for several minutes

MEDICAL CONDITIONS POSSIBLY AGGRAVATED BY EXPOSURE:
Diseases of the blood-forming organs, kidneys, nervous and possibly reproductive systems

POTENTIAL HEALTH EFFECTS

EYE CONTACT: May cause moderate irritation, tearing, and reddening. Contact with fumes from molten metal may cause irritation.
INHALATION: Inhalation of fumes or dust may cause local irritation to the respiratory system, dizziness, weakness, fatigue, nausea, and/or headache.
SKIN CONTACT: May cause mild skin irritation.
INGESTION: Harmful if swallowed. May cause irritation to the mouth, throat, and stomach. May cause abdominal discomfort, nausea, vomiting, and/or diarrhea.

SECTION 2: HAZARDS IDENTIFICATION (continued)

POTENTIAL HEALTH EFFECTS (CHRONIC & OVEREXPOSURE)

TIN: Dust or fumes may cause irritation of the skin mucous membranes and may result in a benign Pneumoconiosis (Stannosis).

SILVER: May cause discoloration of eyes and skin (Argyia).

BISMUTH: May cause foul breath, a blue-black line on the gums, and Stomatitis.

ANTIMONY: May cause gastrointestinal upset, sleeplessness, irritability, and muscular pain.

LEAD: Prolonged exposure to vapors or fumes at high temperatures may cause respiratory irritation and systematic lead poisoning. Can cause high lead levels in blood and urine. Repeated or prolonged exposure to lead can produce target organs damage. Chronic exposure can cause irritability, visual disturbances, blood pressure elevation and discoloration of skin.

CHRONIC/ ACUTE HEALTH HAZARDS: Lead: Women of child-bearing age should avoid exposure to lead and its inorganic compounds due to post-natal effects. Lead can cause potential injury to a developing fetus and possible effects on reproduction. Exposure to high levels of airborne or ingested lead may produce symptoms of anemia, weakness, constipation, nausea, and abdominal pain. Prolonged exposure may result in kidney and/or nervous system involvement.

SECTION 2 NOTES:
Inventec Performance Chemicals USA, LLC does not recommend, manufacture, market, or endorse any of its products for human consumption.
Chronic Toxicity-Proposition 65, State of California: Warning! This product contains lead, known to the state of California to cause birth defects or other reproductive harm.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredients[1]	C.A.S. Number	Weight Percent	OSHA PEL mg/m^3	ACGIH TLV TWA mg/m^3
Modified Rosins[2]	NA	<45	NE	NE
Mixed Carboxylic Acids[2]	NA	<4	NE	NE
Lead	7439-92-1	Product contains one or more of these metallic elements in varying percentages	0.05	0.05
Tin	7440-31-5		2.00	2.00
Silver	7440-22-4		0.01	0.10
Bismuth	7440-69-9		NE	NE
Antimony	7440-36-0		0.50	0.50
Copper	7440-50-8		1.00	1.00
Non-Hazardous Ingredients				
Surfactants	NA	<4	NE	NE
Rheological Modifier	NA	<5	NE	NE

SECTION 3 NOTES:
(1)Per 29 CFR 1910 the mixture has not been tested as a whole. All hazardous components, which comprise 1% of the mixture (0.1% carcinogenic), are listed. Percentages of individual components are not listed as this information is considered a trade secret.
(2) The identity of the specific chemical(s) is being withheld as a trade secret per 29 CFR 1910.1200. The hazardous properties of these ingredients are disclosed in this SDS.

SECTION 4: FIRST AID MEASURES

EYES: Flush with water, contact a physician. Dust and/or fumes may cause irritation. If contact lenses can be removed easily, flush eyes without contact lenses.

SKIN: For hot metal burns, exposed area should be cooled with water and medical attention sought. After handling material wash hands thoroughly with soap and water. Dust, vapor, and/or fumes are not readily absorbed through the skin.

INGESTION: Seek medical attention immediately. Do not induce vomiting.

INHALATION: Remove to fresh air. If breathing is difficult, seek immediate medical attention.

OTHER: Lead: Excessive overexposure may result in an acute or chronic illness. If symptoms are present, the individual should be immediately removed from exposure and a physician consulted.

SECTION 5: FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Use extinguishers appropriate for conditions.

SPECIAL FIRE FIGHTING PROCEDURES: Use NIOSH-approved self-contained Breathing Apparatus and full protective clothing if involved in a fire. Do not use water on fire where molten metal is present.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Moderate in the form of dust when exposed to heat or flame. When heated to high temperatures, lead emits highly toxic fumes.

HAZARDOUS DECOMPOSITION PRODUCTS: Lead oxide fumes and/or Lead particulate may be evolved.

SECTION 5 NOTES:
Molten solder alloys consisting of Antimony, Bismuth, Copper, Lead, Silver, and/or Tin do not produce significant quantities of fumes below 900 °F.

SECTION 6: ACCIDENTAL RELEASE MEASURES

PRECAUTIONS AND EQUIPMENT: Exposure to the spilled material may be irritating. Follow on-site personal protective equipment recommendations.

ACCIDENTAL RELEASE MEASURES: Follow directions listed under HANDLING/STORAGE.

SECTION 6 NOTES:
See Sections 2, 4, and 7 for additional information.

SECTION 7: HANDLING AND STORAGE

HANDLING: Avoid inhalation of solder fumes or dust. Vacuuming is recommended. Do not use dry sweeping or compressed air cleaning systems. Wear protective gloves to pick up solid metal pieces. Dispose of following Federal, State/Provincial, and Local regulations. Metal may have reclaim value.

STORAGE: Store in a cool, dry place. Keep away from food and drinking water. Keep away from heat and flames.

OTHER PRECAUTIONS: Empty containers may retain product residues in vapor, liquid, and/or solid form. All labeled hazard precautions should be observed.

SECTION 7 NOTES:
For industrial use only.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

VENTILATION: Provide sufficient mechanical (general and/or local exhaust) ventilation to maintain exposure below TLVs.

RESPIRATORY PROTECTION: A NIOSH-approved dust/fume respirator should be worn when applicable limits may be exceeded. General and local exhaust ventilation is the preferred means of protection.

EYE PROTECTION: Safety glasses and/or face protection is recommended for exposures where there is a risk of dust or hot metal splashing.

SKIN PROTECTION: Protective gloves should be worn to reduce burn exposure.

PROTECTIVE CLOTHING OR EQUIPMENT: Work clothes should be worn and laundered in accordance with current OSHA Lead (Pb) standards.

WORK HYGIENIC PRACTICES: Cosmetics/Food/Drink/Tobacco should not be consumed or used in areas where solder products may be used. Always wash hands after handling soldering products and before applying or using cosmetics/food/drink/tobacco.

OTHER: Maintain eye wash stations in work areas. Avoid the use of contact lenses in high fume or particulate areas. Clean protective equipment regularly. Clean up spills immediately.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE:	Solid silver-gray metal, wire form
SHAPE:	Wire
ODOR:	Odorless
ODOR THRESHOLD:	Not established
pH as SUPPLIED:	N/A
MELTING POINT:	Varies
FREEZING POINT:	Varies
INITIAL BOILING POINT:	Varies
BOILING RANGE:	N/A (°F/°C)
FLASH POINT:	N/A (°F/°C)
EVAPORATION RATE:	N/A
FLAMMABILITY (SOLID):	Not established

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES (continued)

UPPER/LOWER FLAMMABILITY: Not established
UPPER/LOWER EXPLOSIVE LIMITS: Not established
VAPOR PRESSURE (mmHg): N/A (°F/°C)
VAPOR DENSITY (AIR = 1): N/A (°F/°C)
RELATIVE DENSITY: Not established
SOLUBILITY IN WATER: Insoluble
PARTITION COEFFICIENT (n-octanol/water): Not established
AUTOIGNITION TEMPERATURE: Not established
DECOMPOSITION TEMPERATURE: Not established
VISCOSITY: N/A (°F/°C)

SECTION 9 NOTES:
Other physical and chemical properties depend on alloy composition.
Some typical alloy compositions are:

63%Tin/37%Lead
96.5%Tin/3%Silver/0.5%Copper
95%Tin/5%Antimony
42%Tin/58%Bismuth
62%Tin/36%Lead/2%Silver
10%Tin/90%Lead
95.5%Tin/4.0%Silver/0.5%Copper

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable
CONDITIONS TO AVOID (STABILITY): Not established
INCOMPATIBILITY (MATERIAL TO AVOID): Oxidizing materials, acids, hydrogen peroxide, bases
HAZARDOUS DECOMPOSITION/BY-PRODUCTS: Lead oxide fumes and/or Lead particulate may be evolved
POSSIBILITY OF HAZARDOUS REACTIONS: Will not occur

SECTION 11: TOXICOLOGICAL INFORMATION

ACUTE TOXICITY:

Antimony (7440-36-0)	
LD50 Ingested rat	7000 mg/kg

Silver (7440-22-4)	
LD50 Oral mouse	100/mg/kg

SKIN CORRISION/IRRITATION: Not established
SERIOUS EYE DAMAGE/IRRITATION: Not available
RESPIRATORY OR SKIN SENSITIZATION: Not established
GERM CELL MUTAGENICITY: Not available
CARCINOGENICITY:

OSHA: N/A	**ACGIH:** Lead (Pb)-A3	**NTP:** N/A	**IARC:** Lead (PB)-Group 2B

REPRODUCTIVE TOXICITY: Not available
STOT-SINGLE EXPOSURE: Not available
STOT-REPEATED EXPOSURE: Not available
ASPIRATION HAZARD: Not available

SECTION 11 NOTES:
This product is a solid that has not been tested as a whole to determine its hazards. Synergistic or additive effects of the above chemicals are unknown, as are the effects of exposure to these chemicals in addition to others present in the work place. See Section 2 for additional health hazards.

SECTION 12: ECOLOGICAL INFORMATION

TOXICITY: Not established
PERSISTENCE AND DEGRADABILITY: Not established
BIOACCUMULATIVE POTENTIAL: Not established
MOBILITY IN SOIL: **Lead**: If this is released or deposited on soil it generally will remain in the top 2-5cm of soil.
OTHER ADVERSE EFFECTS: Not established

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Scrap and waste solder should be recycled or stored in a dry, sealed container for later disposal. Disposal must be in accordance with standards, regulations, laws, and statutes set forth by Federal, State/Provincial, and Local Regulations.

SECTION 14: TRANSPORT INFORMATION

Transport in accordance with applicable regulations and requirements.

UN Number:	Not available
UN Proper Shipping Name:	Not available
Packaging Group:	Not applicable
Environmental Hazards:	None

TRANSPORT HAZARD CLASSES:

US DOT Hazardous Material Classification:	Core Wire is not listed as a DOT hazardous material
Water Transportation:	Core Wire is not listed as a hazardous material
IATA Hazardous Material Classification:	Core Wire is not listed as IATA hazardous material

SECTION 15: REGULATORY INFORMATION

All ingredients are listed on the EPA TSCA Inventory. Finished product is not listed on the EPA TSCA Inventory.

U.S. FEDERAL REGULATIONS:	None
STATE REGULATIONS:	None
INTERNATIONAL REGULATIONS:	None

SECTION 16: OTHER INFORMATION

This SDS is a compilation of information supplied by the manufacturers of the chemicals contained in this product.

HMIS Rating: Health=1 Flammability=1 Physical Hazard=0 Personal Protection=X

PREPARATION INFORMATION:
This update supersedes all previously released documents.

KEY:

N/A:	Not applicable
GHS:	Global Harmonized System
OSHA:	Occupational Safety and Health Administration
ACGIH:	American Conference of Governmental Industrial Hygienists
NTP:	National Toxicology Program
IARC:	International Agency for Research on Cancer
CAS:	Chemical Abstract Service
PEL:	Permissible Exposure Limit
TLV:	Threshold limit value
TWA:	Time Weighted Average
NE:	Not Established
NIOSH:	National Institute for Occupational Safety and Health
LD50:	Lethal Dose, 50% or median lethal dose
STOT:	Specific target organ toxicity
DOT:	Department of Transportation
IATA:	International Air Transport Association
EPA:	Environmental Protection Agency
TSCA:	Toxic Substance Control Act

Prepared By: Wendy W. Gesick
Approved By: Leigh W Gesick

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