

**CS100 CS200 CS300 CS500 CS600 CS900 NICKEL-BASED ALLOY - METALLIZING**

**MATERIAL SAFETY DATA SHEET**

01/11/00

MSDS PROVIDED BY:  
**STOODY INDUSTRIAL AND WELDING SUPPLY, INC.**  
 3316 National Ave., San Diego, Ca. 92113  
 Phone: (619) 234-6750  
**MILITARY EMERGENCY RESPONSE NUMBER 1-800-851-8061**

VERSION DATE 01/03/96 (REPRODUCED SIWS)

CS 100 CS 200 CS 300 CS 500 CS 600 CS CS 900 NICKEL-BASED  
 ALLOY FOR LOW TEMPERATURE SPRAY METALLIZING

**SECTION 1**

**PRODUCT IDENTIFICATION**

COMPANY NAME WHO PROVIDED MSDS.....	HARRIS WELCO. DIV. OF J.W. HARRIS CO., INC.
COMPANY ADDRESS.....	1051 YORK RD KINGS MOUNTAIN, NC 28086
EMERGENCY PHONE NUMBER.....	(800)-424-9300
MSDS VERSION NUMBER.....	2
TRADE NAME.....	CS 100 CS 200 CS 300 CS 500 CS 600 CS CS 900 NICKEL-BASED ALLOY FOR LOW TEMPERATURE SPRAY METALLIZING
HAZARD RATING (HMIS).....	HEALTH - 3 FLAMMABILITY - 0 REACTIVITY - 0 OTHER - 2
HMIS DESIGNATED KEY.....	4-SEVERE HAZARD 3-SERIOUS HAZARD 2-MODERATE HAZARD 1 -SLIGHT HAZARD 0--MINIMAL HAZARD

**SECTION 2**

**HAZARDOUS COMPONENTS**

<u>MATERIAL</u>	<u>% BY WEIGHT</u>	<u>CAS NUMBER</u>	<u>ACGIH TLV (Mg/M3)</u>	<u>SEC 313</u>
METAL POWDER:				
NICKEL	75-88 (BAL)	7440-02-0	1	YES
ALUMINUM	3-6	7429-90-5	10	YES
CARBON	0-1	7782-4-5	5	NA
CHROMIUM	6-129	7440-47-3	0.5	YES
SILCON	0-15	7440-21-3	15	NA
TUNGSTEN	7-10	7440-33-7	1	NA
BORON	1-3	7440-42-8	NA	NA
IRON	2-11 (BAL)	7439-89-6	5	NA
COLBALT	0-1.5	7440-48-4	0.1	YES

**SECTION 3**

**PHYSICAL PROPERTIES**

BOILING POINT.....	NA
MELTING POINT.....	NA
VAPOR PRESSURE.....	NA
VAPOR DENSITY (AIR=1).....	NA
SOLUBILITY IN WATER.....	NA
SPECIFIC GRAVITY.....	NA.
EVAPORATION RATE.....	NA
APPEARANCE AND ODOR.....	SPHERICAL GREY METALLIC POWDER, NO ODOR .

**SECTION 4**

**FIRE AND XPLOSION DATA**

FLASH POINT.....	NA
EXRINGUISHING MEDIA.....	NA
SPECIAL PROCEDURES.....	NON FLAMMABLE WELDING ARC AND SPARKS CAN IGNITE COMBUSTIBLES. SEE Z.49.1 REFERENCE IN SECTION 8
UNUSUAL HAZARDS.....	NO KNOWN HAZARD IF NORMAL SAFETY PRECAUTIONS.

**SECTION 5**

**REACTIVITY DATA**

STABILITY.....	STABLE
CONDITIONS TO AVOID.....	AVOID BREATHING DUST DURING SPRAYING.
HAZARDOUS POLYMERIZATION.....	WILL NOT OCCUR
INCOMPATIBILITY.....	NA

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HAZARDOUS DECOMPOSITION PRODUCTS..... WHEN FILLER METAL IS CONSUMED. THE FUME AND GAS DECOMPOSITION PRODUCTS GENERATED ARE DIFFERENT IN PERCENT AND FORM FROM THE INGREDIENTS LISTED IN SECTION 2. PLUS THOSE FROM THE BASE METAL AND COATINGS ETC. AS NOTED ON OTHER SIDE. REASONABLY EXPECTED FUME CONSTITUENTS OF THIS PRODUCT WOULD INCLUDE – NICKEL CARBONY. GASEOUS REACTION PRODUCTS MAY INCLUDE CARBON DIOXIDE. OZONE AND NITROGEN OXIDES MAY BE FORMED BY THE RADIATION FROM THE ARC . ONERECOMMENDED WAY TO DETERMINE THE COMPOSITION & QUANTITY OF FUMES AND GASES TO WHICH WORKERS ARE EXPOSED IS TO TAKE AN AIR SAMPLE FROM INSIDE THE WELDER'S HELMET, IF WORN OR IN THE WORKER'S BREATHING ZONE. SEE ANSI/AWS F1.1. ALSO AWS F1.3. THIS PRODUCES ADVISE ON THE CONTAMINANTS THAT MAY BE PRESENT IN SIGNIFICANT QUANTITIES: WHICH O THESE SHOULD BE ANALYZED: AND A STRATEGY TO PROVIDE VALID AND ACCURATE EXPOSURE DATA, BOTH ARE AVAILABLE FROM THE AMERICAN WELDING SOCIETY, P.O. BOX 351040, MIAMI, FLORIDA.

### SECTION 6

### HEALTH HAZARD DATA

ROUTES OF ENTRY ..... INHALATION, SKIN AND INGESTION.

HEALTH HAZARDS ..... FUMES AND GASES CAN BE DANGEROUS TO YOUR HEALTH. SHORT TERM OVEREXPOSURE MAY RESULT IN DIZZINESS, NAUSEA, OR DRYNESS OR IRRITATION OF NOSE, THROAT, & EYES. ARC RAYS CAN INJURE EYES & BURN SKIN. ELECTRIC SHOCK CAN KILL. SEE SECTIONS 6 & 8. HEAT RAYS (INFRARED RADIATION FLAME OR HOT METAL) CAN INJURE EYES.

CARCINOGENICITY..... THE STATE OF CALIFORNIA REQUIRES THE FOLLOWING INFORMATION WARNING: THIS PRODUCT CONTAINS A CHEMICAL KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER.

SIGNS & SYMPTOMS OF EXPOSURE ..... SEE ABOVE

MEDICAL CONDITIONS FROM EXPOSURE ..... SEE ABOVE.

EMERGENCY & FIRST AID..... CALL FOR MEDICAL AID. EMPLOY FIRST AID TECHNIQUES RECOMMENDED BY THE AMERICAN RED CROSS.

ADDITIONAL INFORMATION ..... THRESHOLD LIMIT VALUE – THE ACGIH RECOMMENDED GENERAL LIMIT FOR WELDING FUME NOC IS 5 MG/M3. ACGIH-2981 PREFACE STATES THE TLV-TWA SHOULD BE USED AS GUIDES IN THE CONTROL OF HEALTH HAZARDS AND SHOULD NOT BE USED AS FINE LINES BETWEEN SAFE AND DANGEROUS CONCENTRATIONS. SEE SECTION 6 FOR SPECIFIC FUME CONSTITUENTS WHICH MAY MODIFY THIS TLV OF 5 MG/M3. TLV'S ARE FIGURES PUBLISHED BY THE AMERICAN CONFERENCE OF GOVERNMENT INDUSTRIAL HYGIENISTS. PUBLICATION OFFICE, P.O. BOX1937, CINCINNATI, OH 45201. UNITS MAY BE MILLIGRAMS PER CUBIC METER (MG/M3), MILLIONS OF PARTICLES PER CUBIC FOOT OF AIR (MPPCF) OR PARTS PER MILLION OF VAPOR OR GAS IN AIR (PPM)

### SECTION 7

### PRECAUTIONS FOR SAFE HANDLING AND USE

SPILL AND LEAK PROCEDURES..... PREVENT WASTE FROM CONTAMINATING SURROUNDING ENVIRONMENT. DISCARD PRODUCT RESIDUE, DISPOSABLE CONTAINER OR LINER IN AN ENVIRONMENTALLY ACCEPTABLE MANNER, IN FULL COMPLIANCE WITH FEDERAL, STATE AND LOCAL REGULATIONS.

WASTE AND DISPOSAL METHOD..... SEE ABOVE

HANDLING AND STORING PRECAUTIONS ..... SEE ABOVE

OTHER PRECAUTIONS..... USE EXHAUST SYSTEM OR RESPIRATOR TO CLEAN WELDING FUMES. MAKE SURE THAT INHALED AIR DOES NOT CONTAIN FUME CONSTITUENTS ABOVE PERMISSIBLE EXPOSURE LEVELS.

### SECTION 6

### CONTROL MEASURES

RESPIRATORY MEASURES ..... USE RESPIRABLE FUME RESPIRATOR OR AIR SUPPLIED RESPIRATOR WHEN WELDING, BRAZING, OR SOLDERING IN CONFINED SPACE OR WHERE LOCAL EXHAUST OF VENTILATION DOES NOT KEEP EXPOSURE BELOW TLV.

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VENTILATION .....	USE ENOUGH VENTILATION, LOCAL EXHAUST AT THE ARC (OR FLAME) OR BOTH TO KEEP FUMES AND GASES FROM WORKER'S BREATHING ZONE AND THE GENERAL AREA. TRAIN WELDER TO KEEP HIS HEAD OUT OF THE FUMES.
PROTECTIVE GLOVES.....	WELDER'S GLOVES RECOMMENDED.
EYE PROTECTION .....	WEAR HELMET OR USE FACE SHIELD WITH FILTER LENS. PROVIDE PROTECTIVE SCREENS AND FLASH GOGGLES, IF NECESSARY TO SHIELD OTHERS.
OTHER PROTECTIVE EQUIPMENT .....	WEAR HAND, HEAD, AND BOTH PROTECTION WHICH HELP TO PREVENT INJURY FROM RADIATION, SPARKS & ELECTRICAL SHOCK.
WORK/HYGIENIC PRACTICES .....	TRAIN WELDER NOT TO TOUCH LIVE ELECTRICAL PARTS & INSULATE HIMSELF FROM WORK AND GROUND. FOR MAXIMUM SAFETY: BE CERTIFIED FOR, AND WEAR A RESPIRATOR AT ALL TIMES WHEN WELDING OR BRAZING.

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**SECTION 9****DISCLAIMER**

THIS DATA IS BELIEVED TO BE ACCURATE. HARRIS WELCO MAKES NO WARRANTY TO AND DISCLAIMS ALL LIABILITY FROM RELIANCE.

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**SECTION 10****ADDITIONAL INFORMATION**

NA = NOT APPLICABLE

READ AND UNDERSTAND THE MANUFACTURER'S INSTRUCTIONS AND THE PRECAUTIONARY LABEL ON THE PRODUCT. SEE AMERICAN NATIONAL STANDARD Z49.1. "SAFETY IN WELDING AND CUTTING" PUBLISHED BY THE AMERICAN WELDING SOCIETY, P.O. BOX 351040, MIAMI, FL 33135 AND OSHA PUBLICATION 2206 (29CFR1910\_). US GOVERNMENT PRINTING OFFICE, WASHINGTON, DC 20402 FOR MORE DETAILS ON SPECIAL PROTECTION INFORMATION.

CARCINOGENICITY INFORMATION: NICKEL, COBALT AND CHROMIUM COMPOUNDS ARE REQUIRED BY OSHA TO BE CONSIDERED TO BE CARCINOGENIC.