

**Ag/Al**  
**(Silver/Aluminum)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHAG800AL999	800	20
HHAG1000AL999	1000	25

**Ag/Cu**  
**(Silver/Copper)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHAG4CU999	4	0.10
HHAG10CU999	10	0.25
HHAG30CU999	30	0.75
HHAG60CU999	60	1.5
HHAG100CU999	100	2.5
HHAG120CU999	120	3.0
HHAG150CU999	150	3.75
HHAG350CU999	350	8.75
HHAG500CU999	500	12.5
HHAG600CU999	600	15
HHAG800CU999	800	20
HHAG1000CU999	1000	25
HHAG1200CU999	1200	30
HHAG2000CU999	2000	50

**Ag/Kovar**  
**(Silver/Kovar)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHAG60KVR999	60	1.5
HHAG150KVR999	150	3.75
HHAG350KVR999	350	8.75
HHAG450KVR999	450	11.25
HHAG650KVR999	650	16.25
HHAG800KVR999	800	20
HHAG1000KVR999	1000	25
HHAG2000KVR999	2000	50

**Ag/Ni**  
**(Silver/Nickel)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHAG40NI999	40	1.0
HHAG160NI999	160	4.0

**Au/Ag**  
**(Gold/Silver)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHAU10AG999	10	0.25
HHAU20AG999	20	0.50
HHAU60AG999	60	1.50
HHAU200AG999	200	5.0

**Au/Al**  
**(Gold/Aluminum)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHAU10AL999	10	0.25
HHAU20AL999	20	0.50
HHAU80AL999	80	2.0
HHAU200AL999	200	5.0

**Au/Kovar**  
**(Gold/Kovar)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHAU10KVR999	10	0.25
HHAU20KVR999	20	0.50
HHAU50KVR999	50	1.25
HHAU90KVR999	90	2.25
HHAU200KVR999	200	5.0
HHAU300KVR999	300	7.5

**Au/Ni**  
**(Gold/Nickel)**

Part No.	Nominal Thicknesses	
	μin	μm
HHAU4NI999	4	0.10
HHAU10NI999	10	0.25
HHAU20NI999	20	0.50
HHAU30NI999	30	0.75
HHAU40NI999	40	1.0
HHAU50NI999	50	1.25
HHAU60NI999	60	1.5
HHAU90NI999	90	2.25
HHAU100NI999	100	2.5
HHAU120NI999	120	3.0
HHAU200NI999	200	5.0
HHAU300NI999	300	7.5

**Bi/Cu**  
**(Bismuth/Copper)**

Part No.	Nominal Thicknesses	
	μin	μm
HHBI20CU999	20	0.50
HHBI50CU999	50	1.25
HHBI100CU999	100	2.5
HHBI150CU999	150	3.75
HHBI200CU999	200	5.0
HHBI250CU999	250	6.25
HHBI300CU999	300	7.5
HHBI400CU999	400	10

**Cd/Al**  
**(Cadmium/Aluminum)**

Part No.	Nominal Thicknesses	
	μin	μm
HHCD250AL999	250	6.25
HHCD350AL999	350	8.75
HHCD900AL999	900	22.5
HHCD1200AL999	1200	30

**Cd/Cu**  
**(Cadmium/Copper)**

Part No.	Nominal Thicknesses	
	μin	μm
HHCD40CU999	40	1.0
HHCD100CU999	100	2.5
HHCD200CU999	200	5.0
HHCD300CU999	300	7.5
HHCD600CU999	600	15
HHCD800CU999	800	20
HHCD1000CU999	1000	25

**Cd/Fe**  
**(Cadmium/Iron or Steel)**

Part No.	Nominal Thicknesses	
	μin	μm
HHCD50FE999	50	1.25
HHCD150FE999	150	3.75
HHCD250FE999	250	6.25
HHCD400FE999	400	10
HHCD500FE999	500	12.5
HHCD800FE999	800	20
HHCD1000FE999	1000	25
HHCD1500FE999	1500	37.5
HHCD2000FE999	2000	50

**Cr/Cu**  
**(Chromium/Copper)**

Part No.	Nominal Thicknesses	
	μin	μm
HHCR60CU999	60	1.5
HHCR80CU999	80	2.0
HHCR200CU999	200	5.0
HHCR400CU999	400	10
HHCR600CU999	600	15
HHCR1000CU999	1000	25

**Cr/Fe**  
**(Chromium/Iron or Steel)**

Part No.	Nominal Thicknesses	
	μin	μm
HHCR80FE999	80	2.0
HHCR150FE999	150	3.75
HHCR500FE999	500	12.5
HHCR600FE999	600	15
HHCR800FE999	800	20

**Cu/Al**  
**(Copper/Aluminum)**

Part No.	Nominal Thicknesses	
	μin	μm
HHCU50AL999	50	1.25
HHCU100AL999	100	2.5
HHCU170AL999	170	4.25
HHCU400AL999	400	10
HHCU1000AL999	1000	25

**Cu/Epoxy**  
**(Copper/Epoxy)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHCU60EPOXY999	60	1.5
HHCU100EPOXY999	100	2.5
HHCU150EPOXY999	150	3.75
HHCU250EPOXY999	250	6.25
HHCU350EPOXY999	350	8.75
HHCU500EPOXY999	500	13
HHCU650EPOXY999	650	16.25
HHCU1000EPOXY999	1000	25

**Cu/Fe**  
**(Copper/Iron or Steel)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHCU30FE999	30	0.75
HHCU80FE999	80	2.0
HHCU100FE999	100	2.5
HHCU200FE999	200	5.0
HHCU400FE999	400	10
HHCU600FE999	600	15
HHCU800FE999	800	20
HHCU1000FE999	1000	25

**Cu/Kovar**  
**(Copper/Kovar)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{in}$
HHCU100KVR999	100	100
HHCU350KVR999	350	350

**Ni/Al**  
**(Nickel/Aluminum)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHNI20AL999	20	0.50
HHNI60AL999	60	1.5
HHNI100AL999	100	2.5
HHNI150AL999	150	3.75
HHNI250AL999	250	6.25
HHNI750AL999	750	18.75
HHNI900AL999	900	22.5

**Ni/Cu**  
**(Nickel/Copper)**

Part No.	Nominal Thicknesses	
	$\mu\text{in}$	$\mu\text{m}$
HHNI10CU999	10	0.25
HHNI20CU999	20	0.50
HHNI40CU999	40	1.0
HHNI50CU999	50	1.25
HHNI60CU999	60	1.5
HHNI80CU999	80	2.0
HHNI100CU999	100	2.5
HHNI120CU999	120	3.0
HHNI200CU999	200	5.0
HHNI300CU999	300	7.5
HHNI400CU999	400	10
HHNI600CU99	600	15
HHNI800CU999	800	20

**Ni/Fe**  
**(Nickel/Iron or Steel)**

Part No.	Nominal Thicknesses	
	μin	μm
HHNI70FE999	70	1.75
HHNI100FE999	100	2.5
HHNI150FE999	150	3.75
HHNI200FE999	200	5.0
HHNI400FE999	400	10
HHNI700FE99	700	17.5
HHNI900FE999	900	22.5
HHNI1000FE999	1000	25

**Ni/Kovar**  
**(Nickel/Kovar)**

Part No.	Nominal Thicknesses	
	μin	μm
HHNI25KVR999	25	0.625
HHNI50KVR999	50	1.25
HHNI100KVR999	100	2.5
HHNI200KVR999	200	5.0
HHNI400KVR999	400	10
HHNI700KVR99	700	17.5

## Ni-P/Al (Electroless Nickel/Aluminum) Non-Certified Phosphorus

Part No	Nominal Thicknesses		Nominal Compositions	
	μin	μm	%P	%Ni
HHNIP70-94AL999	70	1.8	6	96
HHNIP140-94AL999	140	3.5	6	96
HHNIP125-92AL999	125	3.1	8	92
HHNIP150-92AL999	150	3.8	8	92
HHNIP175-92AL999	175	4.4	8	92
HHNIP200-92AL999	200	5.0	8	92
HHNIP250-92AL999	250	6.3	8	92
HHNIP375-92AL999	375	9.4	8	92
HHNIP450-92AL999	450	11.3	8	92
HHNIP500-92AL999	500	12.5	8	92
HHNIP650-92AL999	650	16.3	8	92
HHNIP750-92AL999	750	18.8	8	92
HHNIP120-90AL999	120	3.0	10	90
HHNIP200-90AL999	200	5.0	10	90
HHNIP250-90AL999	250	6.3	10	90
HHNIP400-90AL999	400	10	10	90
HHNIP575-90AL999	575	14.4	10	90

## Ni-P/Cu (Electroless Nickel/Copper) Non-Certified Phosphorus

Part No	Nominal Thicknesses		Nominal Compositions	
	μin	μm	%P	%Ni
HHNIP150-92CU999	150	3.8	8	92
HHNIP300-92CU999	300	7.5	8	92
HHNIP400-92CU999	400	10	8	92
HHNIP500-92CU999	500	12.5	8	92
HHNIP700-92CU999	700	17.5	8	92
HHNIP1000-92CU999	1000	25	8	92
HHNIP60-90CU999	60	1.5	10	90
HHNIP80-90CU999	80	2.0	10	90
HHNIP100-90CU999	100	2.5	10	90
HHNIP140-90CU999	140	3.5	10	90
HHNIP130-88CU999	130	3.3	12	88
HHNIP230-88CU999	230	5.8	12	88
HHNIP350-88CU999	350	8.8	12	88
HHNIP450-88CU999	450	11.3	12	88
HHNIP1200-88CU999	1200	30	12	88

## Ni-P/Fe (Electroless Nickel/Iron or Steel) Non-Certified Phosphorus

Part No	Nominal Thicknesses		Nominal Compositions	
	μin	μm	%P	%Ni
HHNIP80-96FE999	80	2.0	4	96
HHNIP125-96FE999	125	3.1	4	96
HHNIP150-96FE999	150	3.8	4	96
HHNIP200-96FE999	200	5.0	4	96
HHNIP240-96FE999	240	6.0	4	96
HHNIP350-96FE999	350	8.8	4	96
HHNIP450-96FE999	450	11.3	4	96
HHNIP550-96FE999	550	13.8	4	96
HHNIP80-94FE999	80	2.0	6	94
HHNIP100-94FE999	100	2.5	6	94
HHNIP120-94FE999	120	3.0	6	94
HHNIP150-94FE999	150	3.8	6	94
HHNIP220-94FE999	220	5.5	6	94
HHNIP360-94FE999	360	9.0	6	94
HHNIP400-94FE999	400	10	6	94
HHNIP500-94FE999	500	12.5	6	94
HHNIP600-94FE999	600	15	6	94
HHNIP750-94FE999	750	18.8	6	94

## Ni-P/Fe (Electroless Nickel/Iron or Steel) Non-Certified Phosphorus

Part No	Nominal Thicknesses		Nominal Compositions	
	μin	μm	%P	%Ni
HHNIP100-92FE999	100	2.5	8	92
HHNIP150-92FE999	150	3.8	8	92
HHNIP200-92FE999	200	5.0	8	92
HHNIP250-92FE999	250	6.3	8	92
HHNIP300-92FE999	300	7.5	8	92
HHNIP350-92FE999	350	8.8	8	92
HHNIP400-92FE999	400	10	8	92
HHNIP450-92FE999	450	11.3	8	92
HHNIP500-92FE999	500	12.5	8	92
HHNIP600-92FE999	600	16	8	92
HHNIP800-92FE999	800	20	8	92
HHNIP100-90FE999	100	2.5	10	90
HHNIP120-90FE999	120	3.0	10	90
HHNIP160-90FE999	160	4.0	10	90
HHNIP200-90FE999	200	5.0	10	90
HHNIP250-90FE999	250	6.3	10	90
HHNIP350-90FE999	350	8.8	10	90
HHNIP400-90FE999	400	10	10	90
HHNIP450-90FE999	450	11.3	10	90
HHNIP500-90FE999	500	12.5	10	90
HHNIP700-90FE999	700	17.5	10	90
HHNIP800-90FE999	800	20	10	90

## Pd/Cu (Palladium/Copper)

Part No.	Nominal Thicknesses	
	μin	μm
HHPD4CU999	4	0.10
HHPD10CU999	10	0.25
HHPD20CU999	20	0.50
HHPD40CU999	40	1.0
HHPD60CU999	60	1.5

**Pd/Ni**  
**(Palladium/Nickel)**

Part No.	Nominal Thicknesses	
	μin	μm
HHPD20NI999	20	0.50
HHPD40NI999	40	1.0
HHPD80NI999	80	2.0
HHPD120NI999	120	3.0
HHPD200NI999	200	5.0

**Rh/Ni**  
**(Rhodium/Nickel)**

Part No.	Nominal Thicknesses	
	μin	μm
HHRH20NI999	20	0.50
HHRH40NI999	40	1.0
HHRH80NI999	80	2.0
HHRH100NI999	100	2.5

**Sn/Al**  
**(Tin/Aluminum)**

Part No.	Nominal Thicknesses	
	μin	μm
HHSN2AL999	2	0.05
HHSN4AL999	4	0.10
HHSN10AL999	10	0.25
HHSN20AL999	20	0.50
HHSN40AL999	40	1.0
HHSN80AL999	80	2.0
HHSN120AL999	120	3.0
HHSN200AL999	200	5.0
HHSN450AL999	450	11.25
HHSN600AL999	600	15
HHSN800AL999	800	20

**Sn/Cu**  
**(Tin/Copper)**

Part No.	Nominal Thicknesses	
	μin	μm
HHSN4CU999	4	0.10
HHSN10CU999	10	0.25
HHSN20CU999	20	0.50
HHSN40CU999	40	1.0
HHSN80CU999	80	2.0
HHSN150CU999	150	3.75
HHSN200CU999	200	5.0
HHSN300CU999	300	7.5
HHSN400CU999	400	10
HHSN500CU999	500	12.5
HHSN600CU999	600	15
HHSN800CU999	800	20
HHSN1000CU999	1000	25
HHSN1200CU999	1200	30
HHSN2000CU999	2000	50

**Sn/Fe**  
**(Tin/Iron or Steel)**

Part No.	Nominal Thicknesses	
	μin	μm
HHSN40FE999	40	1.0
HHSN200FE999	200	5.0
HHSN450FE999	450	11.25
HHSN650FE999	650	16.25
HHSN800FE999	800	20
HHSN1400FE999	1400	35
HHSN1800FE999	1800	45

**Sn/Kovar**  
**(Tin/Kovar)**

Part No.	Nominal Thicknesses	
	μin	μm
HHSN30KVR999	30	0.75
HHSN60KVR999	60	1.5
HHSN100KVR999	100	2.5
HHSN120KVR999	120	3.0
HHSN200KVR999	200	5.0
HHSN600KVR999	600	15
HHSN1000KVR999	1000	25
HHSN1800KVR999	1800	45

**Zn/Fe**  
**(Zinc on Iron or Steel)**

Part No.	Nominal Thicknesses	
	μin	μm
HHZN100FE999	100	2.5
HHZN200FE999	200	5.0
HHZN320FE999	320	8.0
HHZN400FE999	400	10
HHZN500FE999	500	12.5
HHZN600FE999	600	15
HHZN800FE999	800	20
HHZN1000FE999	1000	25
HHZN1200FE999	1200	30