

1.3.3.4. Ternary actinide pnictides and chalcogenides containing d-electron transition elements (T)

1.3.3.4.1. Survey

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tab.	Ref.
AnTX					
ThRhSb	poly	Lattice parameters		A	87PNVV
		Electrical resistivity ρ vs. T	1		87PNVV
UNiAs	poly	Lattice parameters		A	01JTR
URuSb		Magnetic moment p_{FU} vs. T	2		87PNVV
URhSb	poly	Electrical resistivity ρ vs. T	3		87PNVV
		Crystal structure refinement	4	A	85BDPN , 87PNVV
	poly	Magnetic susceptibility χ_m vs. T up to 200 K	5	B	85BDPN , 86PNMB , 87PNVV
	poly	Heat capacity $\gamma = 2.1 \text{ mJ}/(\text{mol K}^2)$; $\Theta_D = 214 \text{ K}$			86PNMB , 87PNVV
	poly	Electrical resistivity ρ vs. T up to 1000 K	6		86PNMB , 87PNVV
	poly	Magnetoresistivity $\Delta\rho/\rho < 0$; at $T = 10 \text{ K}$ and $B = 7 \text{ T}$: $\Delta\rho/\rho = -3\%$			87PNVV
UPdSb	poly	Hall carrier concentration n vs. T	7		87PNVV
	poly	Valence band photoemission spectra	8		86HTB
		Crystal structure refinement	9	A	85BDPN , 87PNVV
	poly	Magnetic susceptibility		B	86PNMB , 87PNVV
		Inverse magnetic susceptibility χ_g^{-1} vs. T up to 700 K	10	B	85BDPN
	poly	Magnetic moment p_{FU} vs. T	11		87PNVV
	poly	Hysteresis loop	12		87PNVV , 86PNMB
	poly	Heat capacity $\chi(0) = 62 \text{ mJ}/(\text{mol K}^2)$; $\Theta_D = 179 \text{ K}$			87PNVV
	poly	Electrical resistivity ρ vs. T	13		86PNMB , 87PNVV
AnTX₂					
UCoP ₂		Lattice parameters		A	92K
UCuP ₂		Calculated energy band structure (LSDA)	14		02HNAH
		Calculated total and partial DOS	15		02HNAH
	sc	Crystal structure	16	A	87NZKT1
		Inverse magnetic susceptibility χ_m^{-1} vs. T up to 950 K	17		86ZKTN
	sc	χ_m^{-1} vs. T for $B \parallel c$ and $B \perp c$	18	B	91KTN
	sc	Curie temperature T_C vs. pressure up to 0.5 GPa	76(b)		89KDT
	sc	Magnetization σ vs. T for $B \parallel c$ and $B \perp c$	19		91KTN
	sc	Reduced spontaneous magnetization $\sigma_s/\sigma_s(0)$ vs. T/T_C	20		91KTN
	sc	Magnetic moment p_U vs. B at 4.2 K for $B \parallel c$ and $B \perp c$	21		91KTN
	sc	Magnetization isotherms σ vs. B for $B \parallel c$	22(a)		91KTN
	sc	Arrott plot for $B \parallel c$	22(b)		91KTN

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tabs.	Ref.
UCuP ₂ (cont.)	sc	Heat capacity C_p vs. T	23		93BKWS
	sc	Electrical resistivity ρ vs. T for $i \perp c$	24		91KTN
	sc	ρ vs. T up to 1000 K for $i \perp c$	25		89KSK
	sc	Transversal magnetoresistivity $\Delta\rho/\rho$ vs. T for $i \perp c$ $\Delta\rho/\rho < 0.1\%$, T -independent			91KTN
	sc	Hall resistivity ρ_H vs. T at 2 T and 4 T	26(a)		89KSK
	sc	Hall coefficients R_o and R_s vs. T up to 200 K	26(b)		89KSK
	sc	Thermal conductivity κ vs. T	27(a)		92MMKJ
		κ_e , κ_{ph} , κ_m vs. T	27(b)		92MMKJ
	sc	Optical reflectivity R vs. $\hbar\omega$	28		88FSK
	sc	Magnetooptical Kerr effect	29		88FSK , 90RS
		Calculated (LMTO) optical and magneto-optical spectra	30		02HNAH
	sc	Elastic constants c_{33} and c_{44} vs. T	31(a)	D	93KFL
		Calculation of f -p,d,f hybridisation effects			98KKSM
		Lattice parameters		A	92K
UFeAs ₂		Lattice parameters		A	92K
UCoAs ₂	sc	Crystal structure refinement		A	00KNP
		Inverse magnetic susceptibility χ_m^{-1} vs. T	32	B	00KNP
		Magnetization σ vs. B at 5, 20 and 50 K	33(a)		00KNP
		σ vs. T at 0.01 and 0.1 T	33(b)		00KNP
UNiAs ₂		Calculation of 5f -p,d,f hybridisation effects		D	98KKSM
		Crystal structure refinement from neutron data		A	89FMKT
		Inverse magnetic susceptibility χ_m^{-1} vs. T up to 950 K	34(a)		86ZKTN
		Magnetic susceptibility χ_m vs. T	34(b)		86ZKTN
		Magnetic structure by neutron diffraction	35(a)		89FMKT , 90MFK
		Neutron diffraction intensity I of M(100) vs. T	35(b)		89FMKT , 90MFK
		Magnetic structure	51(a)		98KKSM
		Calculation of f -p,d,f hybridisation effects		D	98KKSM
	sc	Single crystal growth method			00AAIR
sc		Crystal structure refinement		A	87SKT
UCuAs ₂		Inverse magnetic susceptibility χ_m^{-1} vs. T up to 950 K	17		86ZKTN
	sc	χ_m^{-1} vs. T for $B \parallel c$ and $B \perp c$	36	B	91KTN
	sc	Curie temperature T_C vs. pressure up to 1.0 GPa	76(b)		89KDT
	sc	Magnetization σ vs. T for $B \parallel c$ and $B \perp c$	37		91KTN
	sc	Reduced spontaneous magnetization $\sigma_s/\sigma_s(0)$ vs. T/T_C	20		91KTN
	sc	Magnetic moment p_U vs. B at 4.2 K for $B \parallel c$ and $B \perp c$	21		91KTN
	sc	Magnetization isotherms σ vs. B for $B \parallel c$	38		91KTN
	sc	Heat capacity C_p vs. T	23		93BKWS
	sc	Electrical resistivity ρ vs. T for $i \perp c$	39		91KTN
	sc	ρ vs. T up to 1000 K for $i \perp c$	40		90KS
	sc	Transversal magnetoresistivity $\Delta\rho/\rho$ vs. T for $i \perp c$	41(a)		91KTN
	sc	$\Delta\rho/\rho$ vs. B at 4.2 K for $i \perp c$	41(b)		91KTN
	sc	Hall resistivity ρ_H vs. T at 2 T and 4 T	42(a)		90KS
	sc	Hall coefficients R_o and R_s vs. T up to 200 K	42(b)		90KS
	sc	Analysis of spontaneous Hall effect	42(c)		90KS

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tabs.	Ref.
UCuAs ₂ (cont.)	sc	Thermal conductivity κ vs. T	27(a)		92MMKJ
	sc	κ_e , κ_{ph} , κ_m vs. T	27(c)		92MMKJ
	sc	Optical reflectivity R vs. $\hbar\omega$	43		88FSRK 89SFRK
	sc	Magneto-optical Kerr effect	44		89SFRK
	sc	Elastic constants c_{33} and c_{44} vs. T	31(b)	D	93KFL
UPdAs ₂		Calculation of f-p,d,f hybridisation effects			98KKSM
		Crystal structure refinement from neutron data		A	90MFK
		Magnetic susceptibility χ_m vs. T and χ_m^{-1} vs. T	45	B	90MFK
		Magnetic structure by neutron diffraction	46(a)		90MFK
		Ordered magnetic moment p_o vs. T	46(b)		90MFK
		Magnetic structure	51(b)		98KKSM
		Calculation of f-p,d,f hybridisation effects		D	98KKSM
UFeSb ₂	poly	Crystal structure refinement	47	A	98KKSM
		Electrical resistivity ρ vs. T	48		98KKSM
UCoS ₂		Crystal structure refinement	47	A	98KKSM
UNiSb ₂		Crystal structure refinement	47	A	92K 98KKSM
		Magnetic susceptibility χ_m vs. T and χ_m^{-1} vs. T	49	B	92K 98KKSM
		¹²¹ Sb Mössbauer spectra	50(a)	C	98KKSM
		Magnetic structure	51(c)		98KKSM
UCuSb ₂		Crystal structure refinement	47	A	92K 98KKSM
		Inverse magnetic susceptibility χ_m^{-1} vs. T	52(a)	B	92K 98KKSM
		Magnetization σ vs. T	52(a)		92K 98KKSM
		σ vs. B at 4.2 K	52(b)		92K 98KKSM
		¹²¹ Sb Mössbauer spectra	50(b)	C	98KKSM
URuSb ₂	poly	Electrical resistivity ρ vs. T	53		98KKSM
		Crystal structure refinement	47	A	98KKSM
		Magnetic susceptibility χ_m vs. T and χ_m^{-1} vs. T	54	B	98KKSM
		¹²¹ Sb Mössbauer spectra	50(c)	C	98KKSM
		Ordered magnetic moment p_o vs. T	55		98KKSM
	poly	Magnetic structure	51(a)		98KKSM
		Electrical resistivity ρ vs. T	56		98KKSM
		Calculation of f-p,d,f hybridisation effects		D	98KKSM
UPdSb ₂		Crystal structure refinement	47	A	98KKSM
		Magnetic susceptibility χ_m vs. T and χ_m^{-1} vs. T	57	B	98KKSM
		¹²¹ Sb Mössbauer spectra	50(d)	C	98KKSM
		Ordered magnetic moment p_o vs. T	55		98KKSM
		Magnetic structure	51(c)		98KKSM
	poly	Electrical resistivity ρ vs. T	58		98KKSM
		Calculation of f-p,d,f hybridisation effects		D	98KKSM
UAgSb ₂		Crystal structure refinement	47	A	95BMJ 98KKSM
	poly	Electrical resistivity ρ vs. T	59		98KKSM

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tabs.	Ref.
UAuSb ₂		Crystal structure refinement	47	A	98KKSM
		Inverse magnetic susceptibility χ_m^{-1} vs. T	60(a)	B	98KKSM
		Magnetization σ vs. T	60(a)		98KKSM
		σ vs. B at 5 K	60(b)		98KKSM
	poly	Electrical resistivity ρ vs. T	61		98KKSM
UNiBi ₂		Lattice parameters		A	92K
UCuBi ₂		Lattice parameters		A	92K
		Magnetic susceptibility χ_m vs. T and χ_m^{-1} vs. T	62	B	92K
AnT₂X₂					
ThCo ₂ P ₂		Lattice parameters		A	85JMMR
α ThNi ₂ P ₂	sc	Crystal structure refinement	63	A	94AJ
β ThNi ₂ P ₂	sc	Crystal structure refinement	63	A	94AJ
ThCu ₂ P ₂		Lattice parameters		A	79KMS
ThRu ₂ P ₂	sc	Lattice parameters		A	87GJ , 91ABJ
	sc	Crystal structure	64	A	92GAJB
ThCo ₂ As ₂		Lattice parameters		A	85JMMR
UFe ₂ P ₂		Lattice parameters		A	85JMMR
UCo ₂ P ₂		Lattice parameters		A	85JMMR , 88ZVLM
		Crystal structure	65	A	91RVJ
		Inverse magnetic susceptibility χ_m^{-1} vs. T up to 380 K	66	B	91RVJ
		χ_m^{-1} vs. T up to 1000 K	67(b)	B	93TKKS
		Magnetization σ vs. T	67(a)		93TKKS
		Magnetization isotherms p_{FU} vs. B	68		94RVJ
		Magnetic structure by neutron diffraction at 2 K: AF, $k = [001/2]$, $p \parallel c$; $p_U = 1.8(2) \mu_B$, $p_{Co} = 0.2(1) \mu_B$			93TKKS
		Neutron diffraction intensity I of M(10½) vs. T	69(a)		94RVJ
		Magnetic structure at LT	69(b)		94RVJ
		Magnetic phase diagram	69(c)		94RVJ
UNi ₂ P ₂		Lattice parameters		A	84HJ
		Inverse magnetic susceptibility χ_m^{-1} vs. T up to 950 K	34(a)		86ZKTN
		Magnetic susceptibility χ_m vs. T	34(b)		86ZKTN
UNi _{1.56} P ₂		Crystal structure refinement from neutron data		A	89FMKT
		Magnetic structure by neutron diffraction	70(a)		89FMKT , 90MFK
		Neutron diffraction intensity I of M(100) vs. T	70(b)		89FMKT , 90MFK
UCu ₂ P ₂		Calculated energy band structure (LSDA)	71		99AHYP
		Calculated total and partial DOS	72		99AHYP
		Calculated Fermi surface	73		99AHYP
	sc	Crystal structure	74	A	87ZNK , 94DZTK
		Inverse magnetic susceptibility χ_m^{-1} vs. T up to 950 K	17		86ZKTN
	sc	χ_m^{-1} vs. T for $B \parallel c$ and $B \perp c$	75(a)		88K
	sc	ac magnetic susceptibility χ_{ac} vs. T and p up to 1.0 GPa	76(a)		89KDT
	sc	Curie temperature T_C vs. pressure up to 0.5 GPa	76(b)		89KDT
	sc	Magnetization σ vs. T for $B \parallel c$ and $B \perp c$	77		90KT

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tab.	Ref.
UCu ₂ P ₂ (cont.)	sc	Reduced spontaneous magnetization $\sigma_s/\sigma_s(0)$ vs. T/T_C	78		90KT
	sc	Magnetization σ vs. B at 4.2 K for $B \parallel c$ and $B \perp c$	79		90KT
	sc	Magnetization isotherms σ vs. B for $B \parallel c$	80		90KT
	sc	Magnetic form factor vs. scattering angle	81		94DZTK
	sc	Magnetization density	82		94DZTK
	sc	Magnetic amplitude p_o vs. T	83		94DZTK
		Possible magnetic structures	84(a,b)		90KT
		Magnetic exchange interactions diagram	84(c)		90KT
		Crystal field models	75(b)	E	88K, 95G
	sc	Electrical resistivity ρ vs. T for $i \perp c$ and $i \parallel c$	85		90KT
	sc	Optical reflectivity	86		88FSRK, 89SFRK, 90RS
	sc	Magneto-optical Kerr effect	87		89SFRK, 90RS
		Calculated magneto-optical spectra	88,89		99AHYP
	sc	Crystal structure refinement		A	92GAJB
URu ₂ P ₂	sc	Lattice parameters		A	88ZVLM
UCo ₂ As ₂		Lattice parameters		A	88JHT
UNi ₂ As ₂		Lattice parameters		A	88JHT
UNi _{1.6} As ₂	sc	Crystal structure refinement	90	A	90TKNG2
	sc	Magnetic susceptibility χ_m vs. T	91(a)		94TBNK
	sc	χ_m^{-1} vs. T	91(b)	B	94TBNK
	sc	Magnetic moment p_{FU} vs. B at 4.2 K	92		94TBNK
	sc	Neutron intensity I of M(10½) and M(100) vs. T	93(a)		94TBNK
	sc	Normalised ordered magnetic moment $p_o/p_o(0)$ vs. T and magnetic structure	93(b)		94TBNK
	sc	Normalised electrical resistivity $\rho/\rho(300\text{ K})$ vs. T	94		94TBNK
URh _{1.6} As _{1.9}	sc	Crystal structure	95	A	88ZVLM
AnT₄X₁₂					
ThFe ₄ P ₁₂	sc	Crystal structure refinement		A	80BJ, 95EJBB
	sc	Normalised electrical resistivity $\rho/\rho(300\text{ K})$ vs. T	96		87TCDG
ThRu ₄ P ₁₂		Lattice parameter		A	80BJ
ThOs ₄ As ₁₂		Lattice parameter		A	80BJ
UFe ₄ P ₁₂	sc	Lattice parameter		A	85MTYM
	sc	Crystal structure refinement from X-ray data	97	A	95EJBB
	sc	Crystal structure refinement from the neutron data		A	99NDTB
	sc	Inverse magnetic susceptibility χ_m^{-1} vs. T	98	B	85MTYM
	sc	Low-field magnetization σ vs. T under pressure	99(a)		87GRM
	sc	Curie temperature T_C vs. p	99(b)		87GRM
	sc	Magnetic moment p_U vs. B at 1.64 and 4.2 K	100(a)		87GRM
	sc	p_U vs. B at 1.6 K under pressure	101(a)		87GRM
	sc	Spontaneous magnetic moment p_U^s vs. T	100(b)		87GRM
	sc	Normalised spontaneous moment $p_s/p_s(0)$ vs. p	101(b)		87GRM
	sc	Neutron diffraction intensity I of M(220) vs. T	102		99NDTB
	sc	Heat capacity C_p vs. T (0.8...15 K)	103(a)		86TRMM
	sc	$\ln C_p$ vs. $\ln T$	103(b)		86TRMM
	sc	Normalised electrical resistance $R/R(300\text{ K})$ vs. T	104		85MTYM

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tab.	Ref.
UFe ₄ P ₁₂	sc	Electrical resistance R vs. T under pressure	105		87GRTM
(cont.)	sc	Magnetoresistance $\Delta R/R(0)$ vs. B up to 8 T	106		86TRMM
AnT₅X₃					
UV ₅ P ₃		Lattice parameters		A	93JBP
UCr ₅ P ₃	sc	Crystal structure refinement	107	A	89BJ , 93JBP 93JBP
		Magnetic susceptibility TIP: $\chi(291\text{K}) = 3.72(2) \cdot 10^{-3}$ emu/f.u.			93JBP
UMn ₅ P ₃	sc	Crystal structure refinement	108	A	87PJ , 93JBP
An₂T₁₂X₇					
Th ₂ Mn ₁₂ P ₇		Lattice parameters		A	93JPM
U ₂ Mn ₁₂ P ₇	sc	Crystal structure refinement		A	87PJ , 93JPM
U ₂ Fe ₁₂ P ₇		Lattice parameters		A	92AJ2 , 93JPM
U ₂ Co ₁₂ P ₇		Lattice parameters		A	93JPM
U ₂ Ni ₁₂ P ₇		Lattice parameters		A	91PM , 93JPM , 98EAJ
		Inverse magnetic susceptibility χ_m^{-1} vs. T	109	B	98EAJ
		Magnetic hysteresis loop	110		98EAJ
U ₂ Rh ₁₂ P ₇		Lattice parameters		A	87GCMS
U ₂ Ni ₁₂ As ₇	sc	Crystal structure refinement	111	A	01SKW
An₃TX₅					
U ₃ TiSb ₅	sc	Crystal structure refinement		A	92BJ , 94BJ
U ₃ VSb ₅	poly	Lattice parameters		A	92BJ , 94BJ
U ₃ CrSb ₅	poly	Lattice parameters		A	92BJ , 94BJ
U ₃ MnSb ₅	sc	Crystal structure refinement	112	A	92BJ , 94BJ
An₃T₃X₄					
Th ₃ Co ₃ Sb ₄		Calculated energy band structure	113		01SK
		Calculated partial DOS	114		01SK
		Crystal orbital overlap population analysis	115		01SK
	sc	Crystal structure refinement		A	01SK
		Magnetization hysteresis loop at $T = 300$ K	116		01SK
		Magnetic susceptibility χ_m vs. T (2...370K)	117		01SK
	poly	Electr. conductivity at $T = 300$ K $\sigma_{300} \approx 3800 \Omega^{-1}\text{cm}^{-1}$			01SK
	poly	Thermoelectric power S vs. T (300...570K)	118		01SK
Th ₃ Ni ₃ Sb ₄		APW energy band structure	119		90TKK
		Calculated partial DOS	120		90TKK
	poly	Electrical resistivity ρ vs. T	126(b)		90TMFA2
U ₃ Co ₃ Sb ₄		Lattice parameter		A	79D , 85BDPN , 90ENMB

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tabs.	Ref.
U ₃ Co ₃ Sb ₄ (cont.)	poly	Inverse magnetic susceptibility χ_m^{-1} vs. T	121(a)	B	85BDPN , 90ENMB
	poly	Magnetic moment p_{FU} vs. T	121(b)		90ENMB
	poly	Hysteresis loops at 4.4 and 50 K	122		90ENMB
	poly	Electrical resistivity ρ vs. T	123		90ENMB
U ₃ Ni ₃ Sb ₄		Lattice parameter and crystal structure	124	A	79D , 85BDPN , 90ENMB , 90TMFA2
	poly	Magnetic susceptibility χ_m vs. T	125(a)	B	90TMFA1 , 90TMFA2
	poly	χ_m^{-1} vs. T	125(b)	B	85BDPN , 90ENMB
	poly	Heat capacity $\chi(0) = 2 \text{ mJ}/(\text{K}^2 \text{ mol U-atom})$			90TMFA2
U ₃ Cu ₃ Sb ₄	poly	Electrical resistivity ρ vs. T	126(b)		90TMFA1 , 90TMFA2
	poly	Hall coefficient R_H vs. T	127		90TMFA2
	poly	Thermoelectric power S vs. T	128		90TMFA2
		Lattice parameter		A	90ENMB , 90TMFA2
	poly	Inverse magnetic susceptibility χ_m^{-1} vs. T	129(a)	B	90ENMB
	poly	Magnetic susceptibility χ_m vs. T		B	90TMFA2
	poly	Magnetic moment p_{FU} vs. T at 0.6 T	129(b)		90ENMB
	poly	p_U vs. T at 0.24 T	130		90TMFA2
	poly	Hysteresis loop at 4.5 K	131		90ENMB
	poly	Electrical resistivity ρ vs. T	123		90ENMB
	poly	ρ vs. T	126(a)		90TMFA2
		Lattice parameter		A	79D
U ₃ Rh ₃ Sb ₄		Lattice parameter		A	79D , 90TMFA2
U ₃ Ir ₃ Sb ₄	poly	Magnetic susceptibility χ_m vs. T		B	90TMFA2
	poly	Electrical resistivity ρ vs. T	126(b)		90TMFA2
		Lattice parameter		A	79D
		Lattice parameter		A	79D , 90TMFA2
U ₃ Pt ₃ Sb ₄	poly	Magnetic susceptibility χ_m vs. T		B	90TMFA2
	sc	χ_m vs. T	132		92CLTS
	poly	Electrical resistivity ρ vs. T	126(b)		90TMFA2
	sc	Electrical resistance R vs. T under pressure	133		92CLTS
(U _{1-x} R _x) ₃ - Pt ₃ Sb ₄	sc	Heat capacity C_p/T vs. T (2...15K)	134		92CLTS
	sc	Electrical resistance R vs. T	135		92CLTS
R = Th (x = 0.005, 0.01, 0.10), Lu (x = 0.03), Y (x = 0.03)					

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tab.	Ref.
An₆T₂₀X₁₃					
U ₆ Ni ₂₀ P ₁₃	sc	Lattice parameters		A	98EAJ
		Crystal structure refinement		A	92TKNL
		Inverse magnetic susceptibility χ_m^{-1} vs. T	136	B	98EAJ
U ₆ Rh ₂₀ P ₁₃	sc	Crystal structure refinement	137	A	87GCMS
		Magnetic susceptibility χ_m vs. T		B	87GCMS
U ₆ Ni ₂₀ As ₁₃	sc	Crystal structure refinement		A	92TKNL
other pnictides					
U _{0.87} Mo ₁₃ P ₉	sc	Crystal structure refinement		A	87BJ
UNi ₃ P ₂		Lattice parameters		A	98EAJ
		Inverse magnetic susceptibility χ_m^{-1} vs. T	138	B	98EAJ
		Crystal structure refinement	139	A	92AJ1
ThFe ₄ P ₂	sc	Crystal structure refinement		A	87PJ
UMn ₄ P ₂	sc	Crystal structure refinement		A	90JTRP
		Crystal structure refinement	140	A	90JTRP
		Inverse magnetic susceptibility χ_m^{-1} vs. T up to 400 K	141(a)	B	90JTRP
		χ_m^{-1} vs. T and B up to 400 K	141(b)		90JTRP
UNi ₄ P ₂	sc	Crystal structure refinement		A	93AJ, 98EAJ
		Inverse magnetic susceptibility χ_m^{-1} vs. T	142	B	98EAJ
		Magnetic hysteresis loop	143		98EAJ
α -UCr ₆ P ₄	sc	Crystal structure refinement	144	A	86BJ, 92JB
					87BJ, 92JB
β -UCr ₆ P ₄	sc	Crystal structure refinement	144	A	87BJ, 92JB
					92JB
U ₂ Cu ₄ As ₅	sc	Single crystal growth method			00AAIR
	sc	Crystal structure refinement	145	A	91KNT
		Magnetic susceptibility χ_m vs. T and χ_m^{-1} vs. T	146	B	91KNT
	sc	Electrical resistivity ρ vs. T for $i \perp c$	147(a)		91KNT
	sc	ρ vs. T^n ($n = 2.135$ and 2.455) for $i \perp c$	147(b)		91KNT
U ₂ Cr ₃₀ P ₁₉	sc	Crystal structure refinement		A	87BJ
	sc	Crystal structure refinement	148	A	98LPDG
		Magnetic susceptibility TIP: $\chi_g = 5.3 \cdot 10^{-6}$ emu/g			98LPDG
	sc	Normalised electrical resistivity $\rho/\rho(300\text{ K})$ vs. T	149		98LPDG
	sc	Crystal structure refinement		A	90TKNG1
U ₃ NiAs ₄	sc	Crystal structure refinement		A	86DB
U ₃ Cu ₂ Sb ₃		Crystal structure refinement	150	A	86DB
		Inverse magnetic susceptibility χ_g^{-1} vs. T up to 700 K	151(a)	B	86DB
		Magnetization σ vs. T at 0.3 T	151(a)		86DB
		σ vs. T at 0.1, 0.3 and 1.55 T	151(b)		86DB
		Hysteresis loop	152		86DB
U ₃ Ni _{3.34} P ₆	sc	Crystal structure refinement	153	A	95EJ
		Crystal structure refinement from the neutron data		A	96REJS
		Inverse magnetic susceptibility χ_m^{-1} vs. T	154(a)	B	95EJ
		χ_m^{-1} vs. T (100...160 K)	154(b)		95EJ
		Spontaneous magnetic moment p_{FU}^s vs. T	155(a)		96REJS
		Model calculation of p_{FU}^s vs. T	155(b)		96REJS
		Hysteresis loop	156		96REJS
		Neutron diffraction intensity I of M(100) vs. T	157		96REJS
		Magnetic structure	158		96REJS
		Electrical resistivity ρ vs. T	159		95EJ
	sc				

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tab.	Ref.
U ₄ Cu ₄ P ₇	sc	Crystal structure refinement	160	A	87NZKT2
	sc	Magnetic susceptibility χ_m vs. T for $B \parallel c$ and $B \perp c$	161(a)		90KTN
	sc	χ_m^{-1} vs. T for $B \parallel c$ and $B \perp c$	161(b)	B	90KTN
	sc	Magnetization σ vs. B at 4.2 K for $B \parallel c$ and $B \perp c$	161(c)		90KTN
	sc	Magnetic structure by neutron diffraction	162(a)		94BTKN
	sc	Neutron intensity I of M(100) and M(102) vs. T	162(b)		94BTKN
	sc	Normalised ordered magnetic moment $p_o/p_o(T=0)$ vs. T	162(c)		94BTKN
	sc	Electrical resistivity ρ vs. T for $i \parallel c$	163		90KTN
	sc	ρ vs. T for $i \parallel c$ and $i \perp c$	164(a)		92SKB
	sc	ρ vs. T up to 1000 K for $i \perp c$	164(b)		92SKB
	sc	Hall resistivity ρ_H vs. T for $i \parallel c$	165(a)		92SKB
	sc	Hall coefficient R_H vs. χ_m for $B \parallel c$	165(b)		92SKB
U ₄ Ru ₇ As ₆	sc	Crystal structure refinement		A	00NPK
Th ₅ Fe ₁₉ P ₁₂	sc	Crystal structure refinement	166	A	92AJ1
U ₅ Rh ₁₉ P ₁₂		Lattice parameters		A	87GCMS
Th ₆ Co ₂₀ P ₁₃		Crystal structure refinement			69G
U ₆ Ni ₁₅ P ₁₀	sc	Crystal structure refinement	167	A	02KPN
U ₆ Mo ₇₄ P ₄₉	sc	Crystal structure refinement		A	88BJ
Th ₁₁ Ni ₂₅ P ₂₀	sc	Crystal structure refinement	168	A	96AJ2
U ₁₁ Ni ₂₅ P ₂₀		Lattice parameters		A	96AJ2
ThCu _{1-x} PO	sc	Crystal structure refinement		A	96AJ1
ThCuAsO	sc	Crystal structure refinement		A	96AJ1
UCuPO	sc	Crystal structure refinement	169	A	94KANJ
		Magnetic susceptibility χ_m vs. T and χ_m^{-1} vs. T	170(a)	B	94KANJ
		Magnetization σ vs. B at 5 K	170(b)		94KANJ
		Crystal field models		E	95G
		Lattice parameters		A	96NZWJ , 97NJPB
Th ₂ Ni _{3-x} P ₃ O	sc	Crystal structure refinement	171	A	96AJ1
U ₂ Cu ₂ As ₃ O	sc	Crystal structure refinement	172	A	94KPN
AnTY₃					
ThMnTe ₃	sc	Crystal structure refinement	173	A	00NI
		Magnetic susceptibility χ_m vs. T	174	B	00NI
UScS ₃	sc	Crystal structure refinement		A	78JRT
UVS ₃		Lattice parameters		A	73N , 85NCKS
		Magnetic structure by neutron diffraction	175		77WF
		Lattice parameters		A	73N
UCrS ₃	sc	Crystal structure refinement	176	A	75NPP2
	sc	Lattice parameters		A	85NCKS
		Inverse magnetic susceptibility χ_g^{-1} vs. T (100...500 K)	177	B	85NCKS
		χ_g^{-1} vs. T (100...1200 K)	178	B	76WFBN
		Magnetic moment p_{FU} vs. T	179		76WFBN
		p_{FU} vs. B up to 14 T at various T	180		76WFBN
		Remanent magnetic moment p_{FU}^R vs. T	179		76WFBN
		Magnetic structure by neutron diffraction	181		76WFBN
UFeS ₃	sc	Crystal structure refinement		A	71NPP , 76NP

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tabs.	Ref.
UCoS ₃	sc	Crystal structure refinement Magnetic susceptibility Magnetic moment p_{FU} vs. T at 0.05 and 10 T p_{FU} vs. B up to 15 T at various T Magnetic structure by neutron diffraction	182 183 184	A	71NPP 81CWBN 81CWBN 81CWBN 81CWBN
UNiS ₃	sc	Crystal structure refinement		A	71NPP
UNbS ₃		Lattice parameters Inverse magnetic susceptibility χ_g^{-1} vs. T (100...500 K) Magnetization σ vs. T above 77 K	177 185	A B	85NCKS 85NCKS 85NCKS
URuS ₃	sc	Crystal structure refinement Inverse magnetic susceptibility χ_m^{-1} vs. T Magnetization σ vs. B at 5 K	186 187	A B	87DN 87DN 87DN
URhS ₃	sc	Crystal structure refinement Inverse magnetic susceptibility χ_m^{-1} vs. T	188 186	A B	87DN 87DN
UTaS ₃		Lattice parameters Inverse magnetic susceptibility χ_g^{-1} vs. T (100...500 K) Magnetization σ vs. B at various T	177 189	A B	85NCKS 85NCKS 85NCKS
UVSe ₃		Lattice parameters Magnetic moment p_{FU} vs. T p_{FU} vs. B up to 15 T at various T	190 191	A	74N 77NWF 77NWF
UCrSe ₃		Lattice parameters Magnetic moment p_{FU} vs. T p_{FU} vs. B up to 15 T at various T Magnetic structure by neutron diffraction	190 192 175	A	74N 77NWF 77NWF 77WF
UMnSe ₃		Lattice parameters		A	74N
UFeSe ₃		Lattice parameters		A	74N
UCoSe _{3-x}		Lattice parameters		A	74N
UCoSe ₃		Magnetic moment p_{FU} vs. T p_{FU} vs. B up to 12 T at various T	190 193		77NWF 77NWF
UNiSe _{3-x}		Lattice parameters		A	74N
UPdSe ₃	sc	Crystal structure refinement Inverse magnetic susceptibility χ_m^{-1} vs. T	194 195	A B	89DN 89DN
An₂TY₅					
Th ₂ FeS ₅		Inverse magnetic susceptibility χ_m^{-1} vs. T up to 900 K Inverse differential susceptibility $\delta B/\delta p_{\text{FU}}$ vs. T Spontaneous magnetic moment p_{FU}^s vs. T Magnetic moment p_{FU} vs. B at various T Magnetic structure by neutron diffraction collinear type G(+--+), $p_o(\text{Fe}) = 3.73 \mu_B$ ($p_{a\text{-axis}} = 2.79 \mu_B$, $p_{b\text{-axis}} = 1.92 \mu_B$, $p_{c\text{-axis}} = -1.53 \mu_B$)	196 196 197 198		80BFNW 80BFNW 80BFNW 80BFNW 80BFNW
U ₂ TiS ₅		Lattice parameters Inverse magnetic susceptibility χ_g^{-1} vs. T (80...240 K)	199	A	84NCKS2 84NCKS2
U ₂ FeS ₅	sc	Crystal structure refinement Magnetic susceptibility for $T > 300$ K: $\Theta = -190$ K, $p_{\text{eff}} = 7.1 \mu_B/\text{f.u.}$ Magnetic moment p_{FU} vs. T p_{FU} vs. B at 4.2 K Magnetic structure by neutron diffraction	200 201 202	A	71NPP 76NPP 77WB 77WB 77WB 77WB

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tabs.	Ref.
U ₂ CoS ₅		Lattice parameters		A	73N
		Magnetic susceptibility		B	79WBFN
		Remanent Magnetic moment p_{FU}^{R} vs. T	203		79WBFN
		Magnetic moment p_{FU} vs. B at various T	204		79WBFN
		Magnetic structure by neutron diffraction	205		79WBFN
U ₂ CoS _{5-x} Se _x x = 1, 2, 3, 4		Lattice parameters		A	93CSKM
		Inverse magnetic susceptibility χ_{g}^{-1} vs. T	206	B	93CSKM
U ₂ ZrS ₅		Lattice parameters		A	84NCKS2
		Inverse magnetic susceptibility χ_{g}^{-1} vs. T (80...280 K)	199		84NCKS2
U ₂ HfS ₅		Lattice parameters		A	84NCKS2
		Inverse magnetic susceptibility χ_{g}^{-1} vs. T (80...280 K)	199		84NCKS2
		Magnetization M vs. T at various B	207		84NCKS2
		Hysteresis loop	208		84NCKS2
U ₂ FeSe ₅		Lattice parameters		A	74N
An₃TY₆					
U ₃ ScS ₆	sc	Crystal structure	209	A	76RT
U ₃ TiS ₆		Lattice parameters		A	84NCKS2
		Inverse magnetic susceptibility χ_{g}^{-1} vs. T	210		84NCKS2
U ₃ ZrS ₆		Lattice parameters		A	84NCKS2
		Inverse magnetic susceptibility χ_{g}^{-1} vs. T	210		84NCKS2
U ₃ HfS ₆		Lattice parameters		A	84NCKS2
An₆T₂Y_{15.5}					
U ₆ Rh ₂ S _{15.5}		Lattice parameters		A	96DN
U ₆ Ir ₂ S _{15.5}		Lattice parameters		A	96DN
		Inverse magnetic susceptibility χ_{m}^{-1} vs. T	211	B	96DN
		Magnetization σ vs. B at 5 K	212		96DN
U ₆ Rh ₂ Se _{15.5}	sc	Crystal structure refinement		A	96DN
		Inverse magnetic susceptibility χ_{m}^{-1} vs. T	211	B	96DN
U ₆ Ir ₂ Se _{15.5}	sc	Crystal structure refinement	213	A	96DN
		Inverse magnetic susceptibility χ_{m}^{-1} vs. T	211	B	96DN
		Magnetization σ vs. B at 5 K	212		96DN
An₈TY₁₇					
U ₈ TiS ₁₇		Lattice parameters		A	73N
		Inverse magnetic susceptibility χ_{g}^{-1} vs. T	214(a)	F	79NT
U ₈ VS ₁₇		Lattice parameters		A	73N
		Inverse magnetic susceptibility χ_{g}^{-1} vs. T	215	F	79NT
U ₈ CrS ₁₇	sc	Crystal structure refinement	216	A	73N, 75NPP1
		Inverse magnetic susceptibility χ_{g}^{-1} vs. T	217(a)	F	79NT
U ₈ MnS ₁₇		Lattice parameters		A	73N
		Inverse magnetic susceptibility χ_{g}^{-1} vs. T	218(a)	F	79NT
		χ_{g} vs. T (4.2...80 K)	218(b)		79NT
U ₈ FeS ₁₇	sc	Lattice parameters		A	71NPP, 73N
	sc	Crystal structure	219	A	97KSB
		Inverse magnetic susceptibility χ_{g}^{-1} vs. T	220(a)	F	79NT
		χ_{g} vs. T (4.2...60 K)	220(b)		79NT

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tabs.	Ref.
U ₈ CoS ₁₇	sc	Lattice parameters		A	71NPP, 73N
		Inverse magnetic susceptibility χ_g^{-1} vs. T	221(a)	F	79NT
		χ_g vs. T (4.2...80 K)	221(b)		79NT
U ₈ NiS ₁₇	sc	Lattice parameters		A	71NPP, 73N
		Inverse magnetic susceptibility χ_g^{-1} vs. T	222(a)	F	79NT
		χ_g vs. T (4.2...80 K)	222(b)		79NT
U ₈ TiSe ₁₇		Lattice parameters		A	74N
		Inverse magnetic susceptibility χ_g^{-1} vs. T	214(a)	F	79NT
		χ_g vs. T (4.2...10 K)	214(b)		79NT
U ₈ VSe ₁₇		Lattice parameters		A	74N
		Inverse magnetic susceptibility χ_g^{-1} vs. T	215	F	79NT
U ₈ CrSe ₁₇		Lattice parameters		A	74N
		Inverse magnetic susceptibility χ_g^{-1} vs. T	217(a)	F	79NT
		χ_g vs. T (4.2...120 K)	217(b)		79NT
U ₈ MnSe ₁₇		Lattice parameters		A	74N
		Inverse magnetic susceptibility χ_g^{-1} vs. T	218(a)	F	79NT
U ₈ FeSe ₁₇		Lattice parameters		A	74N
		Inverse magnetic susceptibility χ_g^{-1} vs. T	220(a)	F	79NT
		χ_g vs. T (4.2...80 K)	220(c)		79NT
U ₈ CoSe ₁₇		Lattice parameters		A	74N
		Inverse magnetic susceptibility χ_g^{-1} vs. T	221(a)	F	79NT
U ₈ NiSe ₁₇		χ_g vs. T (4.2...50 K)	221(c)		
		Lattice parameters		A	74N
		Inverse magnetic susceptibility χ_g^{-1} vs. T	222(a)	F	79NT
		χ_g vs. T (4.2...80 K)	222(b)		79NT
Chevrel phases					
Th _x PbMo ₆ S ₈ 0 ≤ x ≤ 1.2		Lattice parameters for x = 1.2		A	78SCRF
		Unit cell volume V and superconducting transition temperature T_s vs. x ≤ 0.3	223		78SCRF
Th _{0.81} Mo ₆ S ₈	sc	Crystal structure refinement		A	96DPN
		Magnetic susceptibility (supercond. transition at T_s = 3 K)			96DPN
U _x PbMo ₆ S ₈ 0 ≤ x ≤ 1.2		Lattice parameters for x = 1.2		A	78SCRF
		Unit cell volume V and superconducting transition temperature T_s vs. x ≤ 0.3	223		78SCRF
UMo ₆ S ₈	sc	Crystal structure refinement	224	A	96DPN
		Inverse magnetic susceptibility χ_m^{-1} vs. T	225	B	96DPN
U _{0.82} Mo ₆ Se ₈	sc	Crystal structure refinement		A	96DPN
		Inverse magnetic susceptibility χ_m^{-1} vs. T	226	B	96DPN
		Magnetization σ vs. T	227		96DPN
		σ vs. B at 2 K	228		96DPN
Np _{1+x} Mo ₆ Se ₈ x = 0.0, 0.2	cold pressed	Lattice parameters		A	81DDH
		Inverse magnetic susceptibility χ_m^{-1} vs. T	229	B	81DDG
		Electrical resistance R vs. T (2...9 K)	230		81DDG
Pu _{1+x} Mo ₆ Se ₈ x = 0.0, 0.2	cold pressed	Lattice parameters		A	81DDH
		Inverse magnetic susceptibility χ_m^{-1} vs. T	231	B	81DDH
		Plutonium effective moment p_{eff} vs. T	232		81DDH
		Electrical resistivity (no superconductivity down to 3 K)			81DDH

Compound	State	Crystal structure, magnetic and related properties	Figs.	Tabs.	Ref.
$\text{Am}_{1-x}\text{Mo}_6\text{Se}_8$ $x = 0.0, 0.2$	cold pressed	Lattice parameters Magnetic susceptibility χ_m vs. T for $x = 0.0$ Electrical resistivity (no superconductivity down to 3 K)	233	A	81DDH 81DDH 81DDH
other chalcogenides					
Th_2CuTe_6	sc	Crystal structure refinement Magnetic susceptibility χ_m vs. T (2...300K)	234 235	A	98NI 98NI
$\text{U}_2\text{Cu}_x\text{Te}_6$	sc	Electrical conductivity semiconductor, $E_g = 0.45$ eV			98NI
	sc	Crystal structure refinement for $x = 0.50$	234	A	01PBBK
	sc	$x = 0.66$		A	01PBBK
	sc	$x = 0.78$		A	01HI
	sc	Electrical conductivity σ vs. T (5...330K) for $x = 0.50$	236		01PBBK
	sc	Thermoelectric power S vs. T (5...300K) for $x = 0.50$	237		01PBBK
$\text{U}_x\text{Pd}_3\text{S}_4$ $0.9 < x < 1$ $0.5 < x < 1.5$ $x = 0.90$	sc	Crystal structure for $x = 0.92$ Lattice parameter a vs. x Inverse magnetic susceptibility χ_m^{-1} vs. T	238 239 240	A	86DN1 98FSYM 98FSYM
U_2NiS_4		Magnetic susceptibility		B	70DPLT
UPd_2S_4	sc	Crystal structure refinement	241	A	85DN
U_2PdS_4	sc	Crystal structure refinement	242	A	86DN2
$\text{U}_3\text{Cu}_2\text{Y}_7$ $\text{Y} = \text{S}, \text{Se}$	sc	Crystal structure refinement Inverse magnetic susceptibility χ_m^{-1} vs. T χ_m vs. T	243 244(a) 244(b)	A B	96DLLN 96DLLN 96DLLN
$\text{U}_6\text{Cu}_2\text{S}_{13}$	sc	Crystal structure refinement	245	A	80N 85NP
		Inverse magnetic susceptibility χ_m^{-1} vs. T	246(a)	B	80N
$\text{U}_6\text{Cu}_2\text{Se}_{13}$	sc	Crystal structure refinement Inverse magnetic susceptibility χ_m^{-1} vs. T	246(b)	A B	80N 80N
ThCuKSe_3	sc	Crystal structure refinement	247	A	00NI
ThCuCsSe_3	sc	Crystal structure refinement	247	A	00NI
UCuKSe_3	sc	Crystal structure refinement Far-IR spectroscopy Inverse magnetic susceptibility χ_m^{-1} vs. T (2...300K)	247 248	A	96SAHK 96SAHK 96SAHK
	sc	Electrical conductivity σ vs. T (220...350K)	249		96SAHK
	sc	Thermoelectric power S vs. T (150...300K)	250		96SAHK
UCuCsSe_3	sc	Crystal structure refinement	247	A	01HMI
UCuCsTe_3	sc	Crystal structure refinement	247	A	95CI
UTiCsTe_5	sc	Crystal structure refinement	251	A	94CMCL 95CI
		Magnetic susceptibility χ_m vs. T and χ_m^{-1} vs. T	252	B	95CI
	sc	Electrical conductivity semiconductor: $\sigma(298\text{K}) = 1.2(9) \cdot 10^{-3} \Omega^{-1}\text{cm}^{-1}$			95CI
$\text{UHF}_5\text{Cs}_8\text{Te}_{30.6}$	sc	Crystal structure refinement	253	A	95CI
$\text{U}_2\text{Cu}_{12}\text{K}_6\text{S}_{15}$	sc	Crystal structure refinement	254	A	00SPSK
		Inverse magnetic susceptibility χ_m^{-1} vs. T (5...300K)	255		00SPSK
	hot-	Electrical conductivity σ vs. T (6...300K)	256		00SPSK
	pressed	Thermoelectric power S vs. T (90...300K)	257		00SPSK