

Sheet1

MINERAL,C,1	FORMULA,C,40	HARD	HARD	SG	GLOS	GHI	CRYSTAL,C,1
actinolite	$\text{Ca}_2(\text{Mg,Fe})_5\text{Si}_8\text{O}_{22}(\text{OH})_2$	5.0	6.0	2.9	3.2		monoclinic
adamite	$\text{Zn}_2(\text{AsO}_4)(\text{OH})$	3.5	3.5	4.3	4.5		orthorhombic
aegirite	$\text{NaFe}(\text{Si}_2\text{O}_6)$	6.0	6.5	3.4	3.5		monoclinic
albite	$\text{NaAlSi}_3\text{O}_8$	6.0	6.5	2.6	2.6		triclinic
allanite	$(\text{Ce,Ca,Y})_2(\text{Al,Fe})_3(\text{SiO}_4)_3(\text{OH})$	5.5	6.0	3.5	4.2		monoclinic
alunite	$\text{KAl}_3(\text{SO}_4)_2(\text{OH})_6$	3.5	4.0	2.6	2.8		hexagonal
amblygonite	$(\text{Li,Na})\text{Al}(\text{PO}_4)(\text{F,OH})$	5.5	6.0	3.1	3.1		triclinic
anaclime	$\text{NaAlSi}_2\text{O}_6 \cdot 2\text{H}_2\text{O}$	5.0	5.5	2.2	2.3		cubic
anatase	TiO_2	5.5	6.0	3.8	3.9		tetragonal
andalusite	Al_2SiO_5	7.0	7.5	3.1	3.3		orthorhombic
andesine	$\text{NaAlSi}_3\text{O}_8$	6.0	6.0	2.6	2.6		triclinic
anglesite	PbSO_4	2.5	3.0	6.4	6.4		orthorhombic
anhydrite	CaSO_4	3.0	4.0	2.9	3.0		orthorhombic
anorthite	$(\text{Na,Ca})\text{AlSi}_3\text{O}_8$	6.0	6.5	2.7	2.7		triclinic
anthophyllite	$(\text{Mg,Fe})_7\text{Si}_8\text{O}_{22}(\text{OH})_2$	5.5	6.0	2.8	3.2		orthorhombic
antimony	Sb	3.0	3.5	6.6	6.7		hexagonal
apatite	$\text{Ca}_5(\text{F,Cl,OH})(\text{PO}_4)_3$	5.0	5.0	3.2	3.2		hexagonal
apophyllite	$\text{KCa}_4\text{Si}_8\text{O}_{20}(\text{OH}) \cdot 8\text{H}_2\text{O}$	4.5	5.0	2.3	2.5		tetragonal
aragonite	CaCO_3	3.5	4.0	2.9	2.9		orthorhombic
arfvedsonite	$\text{Na}_2\text{-3}(\text{Fe,Mg,Al})_5\text{Si}_8\text{O}_{22}(\text{OH,F})_2$	6.0	6.0	3.5	3.5		monoclinic
argentite	Ag_2S	2.0	2.5	7.0	7.3		cubic
arsenic	As	3.0	4.0	5.6	5.9		hexagonal
arsenopyrite	FeAsS	5.5	6.0	5.9	6.2		monoclinic
atacamite	$\text{Cu}_2\text{Cl}(\text{OH})_3$	3.0	3.5	3.8	3.8		orthorhombic
augite	$(\text{Ca,Na})(\text{Mg,Fe,Al,Ti})(\text{Si,Al})_2\text{O}_6$	5.0	6.0	3.3	3.5		monoclinic
autunite	$\text{Ca}(\text{UO}_2)_2(\text{PO}_4)_2 \cdot 10\text{-12H}_2\text{O}$	2.0	2.5	3.1	3.1		orthorhombic
axinite	$\text{Ca}_2(\text{Fe,Mn})\text{Al}_2(\text{BO}_3)(\text{Si}_4\text{O}_{12})(\text{OH})$	6.5	7.0	3.3	3.3		triclinic
azurite	$\text{Cu}_3(\text{CO}_3)_2(\text{OH})_2$	3.5	4.0	3.7	3.9		monoclinic
barite	BaSO_4	2.5	3.0	4.5	4.5		orthorhombic
beryl	$\text{Be}_3\text{Al}_2\text{Si}_6\text{O}_{18}$	7.5	8.0	2.6	2.8		hexagonal
biotite	$\text{K}(\text{Mg,Fe})_2(\text{Al,Fe})\text{Si}_3\text{O}_{10}(\text{OH,F})_2$	2.5	3.0	2.7	3.1		monoclinic
bismuth	Bi	2.0	2.5	9.7	9.8		hexagonal
bismuthinite	Bi_2S_3	2.0	2.0	6.4	6.5		orthorhombic
boracite	$\text{Mg}_3\text{B}_7\text{O}_{13}\text{Cl}$	7.0	7.0	3.0	3.0		cubic
borax	$\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$	2.0	2.5	1.7	1.7		monoclinic
bornite	Cu_5FeS_4	3.0	3.0	4.9	5.3		cubic
bournonite	PbCuSbS_3	2.5	3.0	5.5	5.9		orthorhombic
brookite	Ó-TiO_2	5.5	6.0	4.2	4.9		orthorhombic
brucite	$\text{Mg}(\text{OH})_2$	2.5	2.5	2.4	2.4		hexagonal
calcite	CaCO_3	3.0	3.0	2.7	2.7		hexagonal
carnallite	$\text{KMgCl}_3 \cdot 6\text{H}_2\text{O}$	3.0	3.0	1.6	1.6		orthorhombic
carnotite	$\text{K}_2(\text{UO}_2)_2(\text{VO}_4)_2 \cdot 3\text{H}_2\text{O}$	1.0	1.0	4.7	5.0		monoclinic
cassiterite	SnO_2	6.0	7.0	6.8	7.1		tetragonal
celestite	SrSO_4	3.0	3.5	4.0	4.0		orthorhombic
cerussite	PbCO_3	3.0	3.5	6.5	6.5		orthorhombic
chabazite	$\text{Ca}(\text{Al}_2\text{Si}_4)\text{O}_{12} \cdot 6\text{H}_2\text{O}$	4.0	5.0	2.1	2.2		hexagonal
chalcanthite	$\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$	2.5	2.5	2.1	2.3		triclinic
chalcocite	Cu_2S	2.5	3.0	5.7	5.8		orthorhombic

Sheet1

chalcopyrite	CuFeS ₂	3.5	4.0	4.1	4.3 tetragonal
chlorite	(Mg,Fe) ₆ (AlSi ₃)O ₁₀ (OH) ₈	2.0	2.5	2.6	3.3 monoclinic
chondrodite	(Mg,Fe) ₃ (SiO ₄)(OH,F) ₂	6.0	6.5	3.1	3.1 monoclinic
chromite	FeCr ₂ O ₄	5.5	5.5	4.5	4.8 cubic
chrysoberyl	BeAl ₂ O ₄	8.5	8.5	3.7	3.7 orthorhombic
chrysocolla	(Cu,Al) ₂ H ₂ Si ₂ O ₅ (OH) ₄ ·nH ₂ O	2.0	4.0	2.0	2.2 amorphous
cinnabar	HgS	2.0	2.5	8.0	8.2 hexagonal
clinozoisite	Ca ₂ Al ₃ Si ₃ O ₁₂ (OH)	6.5	6.5	3.3	3.5 monoclinic
cobaltite	CoAsS	5.5	5.5	6.0	6.3 cubic
colemanite	Ca ₂ B ₆ O ₁₁ ·5H ₂ O	4.0	4.5	2.4	2.4 monoclinic
columbite	(Fe,Mn)(Nb,Ta) ₂ O ₆	6.0	6.0	5.3	8.1 orthorhombic
copper	Cu	2.5	3.0	8.5	9.0 cubic
cordierite	Mg ₂ Al ₄ Si ₅ O ₁₈	7.0	7.5	2.6	2.7 orthorhombic
corundum	Al ₂ O ₃	9.0	9.0	3.9	4.1 hexagonal
covellite	CuS	1.5	2.0	4.6	4.6 hexagonal
crystalite	SiO ₂	6.0	7.0	2.3	2.3 cubic
crocoite	PbCrO ₄	2.5	3.0	5.9	6.1 monoclinic
cryolite	Na ₃ AlF ₆	2.5	3.0	2.9	2.9 monoclinic
cuprite	Cu ₂ O	3.5	4.0	5.8	6.1 cubic
danburite	CaB ₂ Si ₂ O ₈	7.0	7.3	2.9	3.0 orthorhombic
datolite	CaBSiO ₄ (OH)	5.0	5.5	2.9	3.2 monoclinic
diamond	C	10.0	10.0	3.5	3.5 cubic
diaspore	AlO(OH)	6.5	7.0	3.3	3.5 orthorhombic
diopside	CaMgSi ₂ O ₆	5.0	6.0	3.2	3.4 monoclinic
diopside	CuSiO ₂ (OH) ₂	5.0	5.0	3.2	3.3 hexagonal
dolomite	CaMg(CO ₃) ₂	3.5	4.0	2.8	2.9 hexagonal
dumortierite	Al ₇ (BO ₃)(SiO ₄) ₃ O ₃	7.0	7.0	3.4	3.4 orthorhombic
enargite	Cu ₃ AsS ₄	3.0	3.5	4.4	4.4 ortho
enstatite	Mg ₂ Si ₂ O ₆	5.5	6.0	3.2	3.9 ortho
epidote	Ca ₂ (Al,Fe) ₃ Si ₃ O ₁₂ (OH)	6.0	7.0	3.3	3.5 monoclinic
epsomite	MgSO ₄ ·7H ₂ O	2.0	2.5	1.7	1.7 orthorhombic
erythrite	Co ₃ (AsO ₄) ₂ ·8H ₂ O	1.5	2.5	3.0	3.0 monoclinic
euclase	BeAlSiO ₄ (OH)	7.5	8.0	3.1	3.1 monoclinic
ferberite	FeWO ₄ - MnWO ₄	5.0	5.5	7.1	7.5 monoclinic
fluorite	CaF ₂	4.0	4.0	3.0	3.3 cubic
franklinite	(Zn,Mn,Fe)(Fe,Mn) ₂ O ₄ *	6.0	6.5	5.0	5.2 cubic
galena	PbS	2.5	2.5	7.2	7.6 cubic
garnet	A ₃ B ₂ (SiO ₄) ₃	6.0	8.0	3.4	4.2 cubic
garnierite	(Ni,Mg) ₆ Si ₄ O ₁₀ (OH) ₈	3.0	4.0	2.2	2.8 amorphous
glauberite	Na ₂ Ca(SO ₄) ₂	2.5	3.0	2.8	2.8 monoclinic
glaucosite	(K,Na)(Al,Fe,Mg) ₂ (Al,Si) ₄ O ₁₀ (OH) ₂ *	2.0	2.2	2.5	2.8 monoclinic
glaucophane	Na ₂ (Mg,Fe) ₃ Al ₂ Si ₈ O ₂₂ (OH) ₂	6.0	6.5	3.0	3.3 monoclinic
goethite	FeO(OH)	5.0	5.5	4.0	4.4 orthorhombic
gold	Au	2.5	3.0	15.3	19.3 cubic
graphite	C	1.0	2.0	2.1	2.3 hexagonal
greenockite	CdS	3.0	3.5	4.9	5.0 hexagonal
gypsum	CaSO ₄ ·2H ₂ O	1.5	2.0	2.3	2.3 monoclinic
halite	NaCl	2.0	2.5	2.2	2.2 cubic
harmotome	(Ba,K)(Al,Si) ₂ Si ₆ O ₁₆ ·6H ₂ O	4.0	4.5	2.3	2.5 monoclinic

Sheet1

hausmannite	Mn ₂ O ₄ *	5.5	5.5	4.7	4.8	tetragonal
hauyne	(Na,Ca) ₄₋₈ (Al ₆ Si ₆)O ₂₄ (SO ₄ ,S) ₁₋₂	5.5	6.0	2.3	2.4	cubic
hematite	Fe ₂ O ₃	5.5	6.5	5.2	5.3	hexagonal
hemimorphite	Zn ₄ Si ₂ O ₇ (OH) ₂ ·H ₂ O	4.5	5.0	3.3	3.5	orthorhombic
heulandite	(Na,Ca) ₄₋₆ Al ₆ (Al,Si) ₄ Si ₂₆ O ₇₂ ·24H ₂ O	3.5	4.0	2.2	2.2	monoclinic
hornblende	(Ca,Na) ₂₋₃ (Mg,Fe,Al) ₅ (Al,Si) ₈ O ₂₂ (OH) ₂ *	5.0	6.0	2.9	3.4	monoclinic
hydrozincite	Zn ₅ (CO ₃) ₂ (OH) ₆	2.0	2.5	3.6	3.8	monoclinic
ilmenite	FeTiO ₃	5.0	6.0	4.5	5.0	hexagonal
iron	Fe	4.0	5.0	7.3	7.9	cubic
jadeite	Na(Al,Fe+3)Si ₂ O ₆	6.5	7.0	3.2	3.5	monoclinic
jasper	SiO ₂	7.0	7.0	2.5	2.6	hexagonal
kaolinite	Al ₂ Si ₂ O ₅ (OH) ₄	2.0	2.5	2.6	2.6	triclinic
kernite	Na ₂ B ₄ O ₇ ·4H ₂ O	2.5	2.5	1.9	1.9	monoclinic
kyanite	Al ₂ SiO ₅	5.0	7.0	3.5	3.7	triclinic
labradorite	(Na,Ca)AlSi ₃ O ₈	6.0	6.0	2.7	2.7	triclinic
laumontite	Ca(Al ₂ Si ₄)O ₁₂ ·4H ₂ O	3.5	4.0	2.2	2.4	monoclinic
lazulite	MgAl ₂ (PO ₄) ₂ (OH) ₂	5.0	6.0	3.0	3.1	monoclinic
lazurite	(Na,Ca) ₈ (Al,Si) ₁₂ O ₂₄ (S,SO ₄)	5.0	5.3	2.4	2.4	cubic
lepidolite	K(Li,Al) ₃ (Si,Al) ₄ O ₁₀ (F,OH) ₂	2.5	4.0	2.8	2.9	monoclinic
leucite	KAlSi ₂ O ₆	5.5	6.0	2.4	2.6	cubic
magnesite	MgCo ₃	3.5	4.0	3.0	3.0	hexagonal
magnetite	Fe ₃ O ₄	5.5	6.5	5.0	5.2	cubic
malachite	Cu ₂ (CO ₃)(OH) ₂	3.5	4.0	3.9	4.0	monoclinic
manganite	MnO(OH)	4.0	4.0	4.2	4.4	orthorhombic
marcasite	FeS ₂	6.0	6.5	4.8	4.9	orthorhombic
margarite	CaAl ₂ (Al ₂ Si ₂)O ₁₀ (OH) ₂	3.5	4.5	2.9	3.1	monoclinic
mercury	Hg	0.0	0.0	13.6	13.6	..
microline	KAlSi ₃ O ₈	6.0	6.5	2.5	2.5	triclinic
millerite	NiS	3.0	3.5	5.3	5.6	hexagonal
mimetite	Pb ₅ (AsO ₄) ₃ Cl	3.5	3.5	7.0	7.3	hexagonal
molybdenite	MoS ₂	1.0	1.5	4.7	4.8	hexagonal
monazite	(Ca,La,Nd,Th)PO ₄	5.0	5.5	4.8	5.3	monoclinic
muscovite	KAl ₂ (AlSi ₃)O ₁₀ (OH) ₂	2.0	2.5	2.8	3.0	monoclinic
natrolite	Na ₂ (Al ₂ Si ₃)O ₁₀ ·2H ₂ O	5.0	5.5	2.2	2.4	orthorhombic
nepheline	(Na,K)AlSi ₃ O ₄	5.5	6.0	2.6	2.6	hexagonal
niccolite	NiAs	5.0	5.5	7.3	7.8	hexagonal
oligoclase	(Na,Ca)AlSi ₃ O ₈	6.0	6.5	2.6	2.6	triclinic
olivine	(Mg,Fe) ₂ SiO ₄	6.5	7.0	3.3	3.3	orthorhombic
opal	SiO ₂ ·nH ₂ O	5.5	5.5	1.8	2.2	amorphous
orpiment	As ₂ S ₃	1.5	2.0	3.4	3.5	monoclinic
orthoclase	KAlSi ₃ O ₈	6.0	6.0	2.5	2.6	monoclinic
pectolite	NaCa ₂ Si ₃ O ₈ (OH)	5.0	5.0	2.8	2.9	triclinic
penninite	Mg ₃ (Si ₄ O ₁₀)(OH) ₂ ·Mg ₃ (OH) ₆	2.5	2.5	2.6	2.8	monoclinic
pentlandite	(Fe,Ni) ₉ S ₈	3.0	3.5	4.6	5.0	cubic
petalite	LiAlSi ₄ O ₁₀	6.0	6.5	2.4	2.4	monoclinic
phenakite	Be ₂ SiO ₄	7.5	8.0	3.0	3.0	orthorhombic
phillipsite	(K ₂ ,Na ₂ Ca)(Al ₂ Si ₄)O ₁₂ ·4-5H ₂ O	4.0	4.5	2.2	2.2	monoclinic
phlogopite	K(Mg,Fe) ₃ (AlSi ₃)O ₁₀ (F,OH) ₂	2.5	3.0	2.8	2.8	monoclinic
plagioclase	Na(AlSi ₃ O ₈)	6.0	6.0	2.6	2.7	triclinic

Sheet1

platinum	Pt	4.0	4.5	21.5	21.5 cubic
polybasite	(Ag,Cu) ₁₆ SbS ₁₁	2.0	3.0	6.0	6.2 monoclinic
polyhalite	KaCa ₂ Mg(SO ₄) ₄ ·2H ₂ O	3.0	3.5	2.8	2.8 triclinic
prehnite	Ca ₂ Al ₂ Si ₃ O ₁₀ (OH) ₂	6.0	6.5	2.8	3.0 orthorhombic
proustite	Ag ₃ AsS ₃	2.0	2.5	5.0	6.0 hexagonal
psilomelane	BaMnO ₁₆ (OH) ₄ *	5.0	6.0	3.7	4.7 amorphous
purpurite	(Mn,Fe)PO ₄ *	4.0	4.5	3.3	3.3 orthorhombic
pyragyrite	Ag ₃ SbS ₃	2.5	3.0	5.9	5.9 hexagonal
pyrite	FeS ₂	6.0	6.5	5.0	5.2 cubic
pyrolusite	MnO ₂	2.0	2.5	4.8	4.8 orthorhombic
pyromorphite	Pb ₅ (PO ₄) ₃ Cl	3.5	4.0	6.5	7.1 hexagonal
pyrophyllite	Al ₂ Si ₄ O ₁₀ (OH) ₂	1.0	2.0	2.7	2.9 orthorhombic
pyrrhotite	FeS	3.5	4.5	4.6	4.6 hexagonal
quartz	Ó-SiO ₂	7.0	7.0	2.6	2.7 hexagonal
realgar	AsS	1.5	2.0	3.5	3.6 monoclinic
rhodocrosite	MnCO ₃	3.5	4.5	3.5	3.6 hexagonal
rhodonite	(Mn,Fe,Mg)SiO ₃	5.5	6.5	3.4	3.6 triclinic
rutile	Ó-TiO ₂	6.0	6.5	4.4	4.3 tetragonal
scapolite	(Na,Ca,K) ₄ Al ₃ (Al,Si) ₃ Si ₆ O ₂₄ (Cl,SO ₄ ,CO ₃)	5.0	6.0	2.5	2.8 tetragonal
scheelite	CaWO ₄	4.5	5.0	5.9	6.1 tetragonal
scolecite	Ca(Al ₂ Si ₃)O ₁₀ ·3H ₂ O	5.0	5.5	2.2	2.4 monoclinic
scorodite	FeAsO ₄ ·2H ₂ O	3.5	4.0	3.3	3.3 orthorhombic
sepiolite	Mg ₄ Si ₆ O ₁₅ (OH) ₂ ·6H ₂ O	2.0	2.5	2.0	2.0 orthorhombic
serpentine	Mg ₆ (Si ₄ O ₁₀)(OH) ₈	3.0	4.0	2.5	2.6 monoclinic
siderite	FeCO ₃	3.5	4.5	3.7	3.9 hexagonal
sillimanite	Al ₂ SiO ₅	6.0	7.0	3.2	3.2 orthorhombic
silver	Ag	2.5	3.0	9.6	12.0 cubic
skutterudite	CoAs ₂₋₃	6.0	6.0	6.5	6.8 cubic
smithsonite	ZnCO ₃	5.0	5.5	4.0	4.5 hexagonal
sodalite	Na ₄ Al ₃ (SiO ₄) ₃ Cl	5.0	6.0	2.2	2.4 cubic
sperrylite	PtAs ₂	6.0	7.0	10.6	10.6 cubic
sphalerite	(Zn,Fe)S	3.5	4.0	3.9	4.2 cubic
sphene	CaTiO(SiO ₄)	5.0	5.5	3.5	3.5 monoclinic
spinel	MgAl ₂ O ₄	7.5	8.0	3.5	4.1 cubic
spodumene	LiAlSi ₂ O ₆	6.5	7.0	3.1	3.2 monoclinic
staurolite	(Fe,Mg,Zn) ₂ Al ₉ Si ₄ O ₂₃ (OH)	7.0	7.5	3.7	3.8 orthorhombic
stephanite	Ag ₅ SbS ₄	2.0	2.5	6.3	6.3 orthorhombic
stibnite	Sb ₂ S ₃	2.0	2.0	4.6	4.7 orthorhombic
stilbite	NaCa ₂ (Al ₅ Si ₁₃)O ₃₆ ·14H ₂ O	3.5	4.0	2.2	2.2 monoclinic
strontianite	SrCO ₃	3.3	4.0	3.6	3.7 orthorhombic
sulfur	S	2.0	2.0	1.9	2.1 orthorhombic
sylvanite	AgAuTe ₄	1.5	2.0	8.0	8.3 monoclinic
sylvite	KCl	2.0	2.0	2.0	2.0 cubic
talc	Mg ₃ Si ₄ O ₁₀ (OH) ₂	1.0	1.0	2.7	2.8 monoclinic
tetrahedrite	(Cu,Fe) ₁₂ Sb ₄ Si ₃ - (Cu,Fe) ₁₂ As ₄ Si ₃	3.0	4.5	4.4	5.4 cubic
thenardite	Na ₂ SO ₄	2.5	3.0	2.7	2.7 orthorhombic
topaz	Al ₂ SiO ₄ (F,OH) ₂	8.0	8.0	3.4	3.6 orthorhombic
tourmaline	(Na,Ca)(Al,Fe,Li,Mg) ₃ Al ₆ (BO ₃) ₃ (Si ₆ O ₁₈)*	7.0	7.5	3.0	3.2 hexagonal
tremolite	Ca ₂ Mg ₅ Si ₈ O ₂₂ (OH) ₂	5.5	6.0	2.9	3.1 monoclinic

Sheet1

trydimite	β -SiO ₂	6.5	7.0	2.3	2.3 hexagonal
turquoise	CuAl ₆ (PO ₄) ₄ (OH) ₈ ·5H ₂ O	5.0	6.0	2.6	2.9 triclinic
ulexite	NaCaB ₅ O ₉ ·8H ₂ O	1.0	2.0	2.0	2.0 triclinic
uraninite	UO ₂	5.5	5.5	10.9	10.9 cubic
vanadinite	Pb ₅ (VO ₄) ₃ Cl	3.0	3.0	6.7	7.1 hexagonal
vesuvianite	Ca ₁₀ (Mg,Fe) ₂ Al ₄ (SiO ₄) ₅ (SiO ₇) ₂ (OH) ₄	6.5	6.5	3.3	3.5 tetragonal
vivianite	Fe ₃ (PO ₄) ₂ ·8H ₂ O	1.5	2.5	2.6	2.7 monoclinic
wavellite	Al ₃ (PO ₄) ₂ (OH) ₃ ·5H ₂ O	3.5	4.0	2.3	2.3 orthorhombic
willemitite	Zn ₂ SiO ₄	5.5	5.5	4.0	4.0 hexagonal
witherite	BaCO ₃	3.5	3.5	4.3	4.4 orthorhombic
woolastonite	CaSiO ₃	4.5	5.0	2.8	2.9 monoclinic
wulfenite	PbMoO ₄	3.0	3.0	6.3	6.7 tetragonal
zincite	(Zn,Mn)O	4.5	5.0	5.4	5.7 hexagonal
zircon	ZrSiO ₄	7.0	7.5	3.9	4.8 tetragonal
zoisite	Ca ₂ Al ₃ (Si ₃ O ₁₂)(OH)	6.0	6.5	3.3	3.4 orthorhombic

Sheet1

HABIT,C,50	CLEAVAGE,C,25	FRACTURE,C,15
prismatic, radiating, fibrous	2 perfect	uneven
small, many faceted prisms	2: 1 good, 1 poor	uneven
striated prisms, fibrous	prismatic, distinct	uneven
tabular, often massive	3: 2 good, 1 poor	uneven
tabular, prismatic	poor	uneven
rhombohedral, massive, earthy	basal, good	conchoidal
rough crystals; compact or cleavable masses	4: 3 good, 1 perfect	uneven
earthy or radiating granular aggregates	0 none	uneven
pyramids or tabular	perfect basal	uneven
granular, massive, usually square cross section	2 good at 90°	uneven
commonly massive	3: 2 good at 90°, 1 poor	uneven
prismatic, tabular, massive	2 good	conchoidal
crystalline or massive	3 poor	uneven
prismatic or massive	3: 2 good at 90°, 1 poor	uneven
lamellar, fibrous needles, felted aggregates	1 perfect	uneven
pseudocubic, tabular, massive	1 perfect	uneven
crystalline, massive, usually 6 sided crystals	1 poor	conchoidal
prismatic, foliated, massive	1 perfect	uneven
concretionary, stalactitic, fibrous, radiating	3: 1 good, 2 poor	uneven
prismatic, tabular crystals; rodlike aggregates	2 perfect at 60° & 120°	uneven
distorted, crystals, massive	0 none	conchoidal
often granular or massive	1 perfect	uneven
prismatic or massive	1 good	uneven
prismatic, tabular, massive	1 perfect	conchoidal
usually prismatic	2 good at 90°	uneven
pseudo tetragonal plates	1 perfect	uneven
sharp blades or massive	1 good	conchoidal
prismatic, tabular, massive	2 good	conchoidal
platy, tabular, massive, earthy, stalactic masses	3: 2 good at 80°, 1 poor	uneven
6 or 12 sided prisms, massive	1 poor	conchoidal
tabular, foliated	1 perfect	uneven
pseudocubic, foliated, massive	1 poor	earthy
small needles, usually massive	1 poor	conchoidal
cubes, octahedra, or massive	2: 1 poor, 1 good	conchoidal
prismatic or massive	2: 1 poor, 1 good	conchoidal
usually massive	0 none	conchoidal
often twins, crystals or massive	3: 1 good, 2 poor	conchoidal
tabular, crystals	3: 2 good, 1 poor	uneven
crystals, massive, fibrous	1 perfect	uneven
rhombohedra, prisms, massive	3 perfect at 75°	conchoidal
usually massive or granular	0 none	conchoidal
earthy or powdery aggregates	1 perfect	earthy
crystals, fibrous, massive	2 good	conchoidal
tabular, fibrous, granular	3: 1 perfect, 2 good	conchoidal
prismatic, granular, massive	2 good	conchoidal
rhombohedral or massive	3 poor	uneven
flat crystals, also massive	0 none	conchoidal
massive	1 poor	conchoidal

Sheet1

massive	1 poor	conchoidal
6 sided crystals,foliated,scales,compact,granular	1 perfect	earthy,scaly
usually round grains, massive aggregates	1 poor	uneven
octahedral, usually massive	0 none	uneven
prismatic, tabular, stellate	3: 1 good, 2 poor	conchoidal
botryoidal or earthy	0 none	conchoidal
rhombohedra, tabular, massive	3 perfect	uneven
elongated crystals,striated;rodlike aggregates	1 perfect	uneven
cube, pyritohedron, usually massive	1 perfect	conchoidal
clear prismatic crystals; also granular or massive	2: 1 perfect, 1 good	uneven
prismatic or tabular crystals;twins;massive	1 good	uneven
octahedra, massive, arborescent	0 none	hackly
pseudohexagonal, massive, granular	1 poor	uneven
rhombohedral,also massive,crude 6-sided crystals	0 none	conchoidal
hex plates, usually massive	1 perfect	uneven
octahedral	0 none	conchoidal
prismatic, granular	3: 1 good, 2 poor	conchoidal
cuboidal crystals, usually massive	0 none	uneven
octahedral, massive, or earthy	0 none	conchoidal
clear prismatic crystals with wedge shaped ends	1 poor	uneven
prismatic, massive, granular	0 none	conchoidal
cubes, octahedra, pebbles	4 perfect	conchoidal
usually as stalactitic or foliated aggregates	0 none	earthy
prismatic, massive, granular	2 good (87° and 93°)	uneven
rhombohedral, also massive	3 perfect	conchoidal
rhombohedral, massive, granular	3 perfect at 74°	conchoidal
columnar or fibrous radiating aggregates	2: 1 good, 1 poor	uneven,hackly
usually massive or granular	3: 2 good, 1 poor	uneven
prismatic, also massive	2 good	uneven
elongated crystals, granular	1 perfect	uneven
prismatic, usually massive, fibrous	2: 1 perfect, 1 good	conchoidal
radiating aggregates,earthy masses and crusts	1 perfect	earthy
prismatic	1 perfect	conchoidal
prismatic, tabular, bladed, massive	1 perfect	uneven
cubes etc, also granular	4 perfect	conchoidal
octahedral, granular, massive	0 none	uneven
cube, octahedra, massive	3 perfect at 90°	sub-conchoidal
various beads,massive,crystals w/12 diamond faces	0 none	uneven
massive or earthy	0 none	earthy
tabular,prismatic;compact masses and crusts	1 perfect	uneven
amorphous, granular or earthy	0 none	earthy
prisms, fibrous, granular, massive	2 perfect	uneven
prisms, tabular, massive, fibrous, earthy	1 perfect	uneven
cubes, usually massive, arborescent	0 none	hackly
usually scaly, massive, granular, earthy	1 perfect	uneven
hemimorphic crystals, crusts	1 good	conchoidal
prisms, stellate, granular, fibrous	3 1 perfect, 2 good	conchoidal
cubes, octahedra, massive, granular	3 perfect at right angles	conchoidal
always cruciform twins	1 poor	uneven

Sheet1

pyramidal, massive, granular	1 good	uneven
crystal beads, granular	3 perfect	conchoidal
massive, earthy, rhombohedral, scaly or fibrous	0 none	uneven
hemimorphic, massive, granular crusts	1 perfect	uneven
tabular, globular masses	1 perfect	uneven
prismatic, bladed, fibrous, massive, granular	2 perfect (56° & 124°)	uneven
usually massive, fibrous, crusts	1 perfect	uneven
very flat, tabular crystals; compact, granular aggrg.	0 none	conchoidal
usually scales, plates, grains	3 perfect	hackly
usually massive (jade)	2 good (87° and 93°)	splintery
cryptocrystalline silica	0 none	conchoidal
earthy	1 perfect	conchoidal
elongated, striated crystals; cleavable masses	3: 2 perfect, 1 good	splintery
prismatic, bladed	2: 1 perfect, 1 good	splintery
tabular, usually massive	3: 2 good, 1 poor	conchoidal
prismatic, fibrous, columnar	2 perfect	uneven
pyramidal, massive, granular	1 good	uneven
compact, massive	6 poor	uneven
usually scaly or granular masses	1 perfect	uneven
cubic form, tetra properties	0 none	conchoidal
usually massive or fibrous	3 perfect	conchoidal
octahedra, massive, granular	4 poor	uneven
usually fibrous masses, granular, earthy	1 perfect	conchoidal
prismatic, aggregates, columnar	1 perfect	uneven
tabular, aggregates, nodules	2 good	uneven
foliated or lamellar aggregates	1 perfect	uneven
liquid globules	0 none	none
prismatic, granular, blocky	2 good at right angles	uneven
needles, fibrous, massive	2 perfect	uneven
trigonal, botryoidal, crusts	0 none	uneven
usually foliated, massive	1 perfect	uneven
tabular, twins, massive, sandy	1 good	conchoidal
pseudo-hexagonal plates, massive	1 perfect	uneven
prismatic, acicular, radial aggregates,	1 perfect	conchoidal
prismatic, aggregates, massive	3 poor	conchoidal
usually irregular masses, botryoidal	0 none	conchoidal
platy, tabular, blocky, massive	1 perfect	conchoidal
granular, prismatic, tabular	2 poor	conchoidal
reniform, stalactitic, massive	0 none	conchoidal
prismatic, usually massive crusts	1 perfect	uneven
prismatic, tabular, granular masses	2 good at 90 °	conchoidal
fibrous or radiating spherical aggregates	2 perfect	splintery
pseudo-hexagonal, massive	1 perfect	uneven
usually granular or massive	0 none	conchoidal
tabular or columnar crystals	1 perfect	uneven
pseudo-hexagonal crystals	1 poor	conchoidal
prismatic cruciform twins, radial aggreg	1 perfect	uneven
tabular, laminar, scales	1 perfect	uneven
common rock forming mineral	3: 2 good at 90°, 1 poor	uneven

Sheet1

usually granular	0 none	hackly
tabular crystals, beveled edges, triangular growths	1 poor	uneven
prismatic, usually platy or fibrous	1 good	conchoidal
hemimorphic tabular, radial aggregates	1 good	uneven
hemimorphic, granular, usually massive	1 good	conchoidal
massive, botryoidal, stalactitic	0 none	uneven
prismatic or massive	1 good	uneven
hemimorphic prisms, massive	1 good	conchoidal
striated cubes, massive, nodular	0 none	conchoidal
usually fibrous, massive, earthy	2 perfect	uneven
trigonal prisms, aggregates, crusts	0 none	uneven
tabular, foliated, radial aggregates	1 perfect	uneven
tabular, foliated, massive, granular	0 none	uneven
prismatic, 6 sided crystals, massive	0 none	conchoidal
prisms, needles, massive, granular	1 good	conchoidal
usually massive, globular, crusts	3 perfect	uneven
large tabular crystals, massive	2 good	uneven
prisms, twins, massive, granular	3: 2 good, 1 poor	uneven
prismatic, massive, granular	2 good	conchoidal
pyramidal, granular, massive	3: 1 good, 2 poor	uneven
prismatic, radiating, fibrous	1 good	uneven
pyramidal, tabular, prismatic	0 none	conchoidal
compact, fine textured; sometimes earthy looking	0 none	conchoidal
massive, granular, foliated, fibrous	0 none	conchoidal
rhombohedral, massive, granular	3 perfect	uneven
acicular, massive, foliated, nodular	1 perfect	uneven
cube, usually massive arborescent	0 none	hackly
small, cubic or octahedral metallic like crystals	2 good	uneven
usually massive, granular, earthy	3 perfect	uneven
dodecahedral, massive	6 perfect	conchoidal
cubes, cube and octahedron	0 none	conchoidal
massive cleavage pieces, crystals, rounded edges	6 perfect	conchoidal
wedge shapes, twins, massive	1 good	conchoidal
octahedra, twins, granular	0 none	conchoidal
8 sided prisms, massive	1 good	splintery
6-sided prisms, often twins	1 poor	conchoidal
massive, disseminated; prismatic, tabular crystals	2 good	sub-conchoidal
needles, radial aggregates, fibrous, massive	1 perfect	conchoidal
tabular, twins, aggregates	1 perfect	uneven
prismatic, needles, fibrous, granular	3 perfect	uneven
bipyramids, granular, fibrous, nodular	2 poor	conchoidal
stubby, prismatic crystals; skeletal rock deposits	1 perfect	uneven
cubic, octahedral crystals; compact, granular masses	1 perfect	uneven
usually granular, massive or scaly	1 perfect	uneven
tetrahedral, massive, granular	0 none	uneven
clusters, granular, massive, tabular	1 perfect	uneven, hackly
striated prisms or massive	1 perfect	uneven
trigonal prisms, massive	0 none	uneven
prisms, bladed, fibrous, massive	2 perfect	splintery

Sheet1

plates, often twins	0 none	uneven
usually massive, stalactitic, crusts	0 none	conchoidal
light, spongy, rounded masses; fine fibers	2: 1 perfect, 1 good	uneven
usually granular masses; cubic, dodecahedral crystals	0 none	conchoidal
trigonal pyramids, aggregates, crusts	0 none	uneven
prismatic, massive, granular	0 none	uneven
small prisms, aggregates, crusts	1 perfect	splintery
usually globular aggregates, crusts	3: 1 perfect, 2 good	uneven
compact, granular or massive	2 good	uneven
prismatic twins, massive, granular	1 good	uneven
tabular, massive, lamellar	2 perfect	uneven
massive, granular, various or flat tabular crystals	3 poor	uneven
massive, granular or foliated	1 perfect	conchoidal
prisms and pyramid, small grains	2 poor	conchoidal
long prisms, massive, fibrous	1 good	uneven

Sheet1

TRANS,C,31	COLOR,C,38	LUSTER,C,20
opaque	green,white,grey	vitreous
transparent	colorless,white,yellow,green	vitreous
opaque	brown,black,green	vitreous,resinous
transparent,translucent,opaque	white,grey,colorless	vitreous,pearly
opaque	black,brown	vitreous
opaque	white,grey,red	vitreous
transparent,translucent	white,yellow,pink,green,blue	vitreous,pearly
transparent,translucent	colorless,white,pink,yellow	vitreous
transparent,translucent,opaque	brown,black,blue,red	adamantine
opaque,translucent	white,pink,brown,grey	vitreous
opaque	white,colorless,grey	vitreous,pearly
transparent,translucent	colorless,white	adamantine
transparent	colorless,white,blue,grey	vitreous
transparent,translucent,opaque	colorless,white,grey,green	vitreous
translucent	grey,light green,light brown	vitreous
opaque	grey white	metallic
transparent,translucent,opaque	green,blue green,yellow,blue,pink	vitreous
transparent,translucent	white,tint	vitreous,pearly
transparent,translucent	colorless,white,yellow,reddish	vitreous
opaque	green black	vitreous
transparent,opaque	colorless,white,yellow	vitreous
opaque	white, dark grey	metallic
opaque	silver,grey	metallic
transparent,translucent	green,g-black	adamantine,vitreous
opaque	black,green-black	vitreous
translucent	yellow,yellow-green	pearly
transparent,translucent	brown,grey,blue,green	vitreous
translucent,opaque	deep blue	vitreous
transparent,translucent	colorless,white,yellow,red,green	vitreous
transparent	blue,yellow,green,pink,white,colorless	vitreous
transparent,translucent,opaque	brown,black,green	pearly
opaque	silver white,pink-reddish	metallic
opaque	grey	metallic
translucent	colorless,white,yellow,green	vitreous
transparent	colorless,white	vitreous
opaque	brownish bronze,blue,purple	metallic
opaque	grey,black	metallic
transparent,translucent	yellow-brown,red,black	adamantine,metallic
translucent	white,blue,green,grey	vitreous,pearly
transparent,translucent,opaque	colorless,white,tint	vitreous
transparent,translucent	white,pink	vitreous
opaque	yellow	earthy
transparent,translucent,opaque	brown,br-black	adamantine
transparent,translucent	white	vitreous,pearly
transparent,translucent	white,grey	adamantine,vitreous
transparent,translucent	colorless,white,pink,yellow,brown	vitreous
translucent	blue	vitreous
opaque	lead grey,black tarnish	metallic

Sheet1

opaque	brassy yellow	metallic
transparent,translucent	green,black	vitreous,pearly
translucent	yellow, red-brown	vitreous,resinous
opaque	black,brown	metallic
transparent	green,yellow-green,brown	vitreous
translucent,opaque	blue green,blue,green	vitreous,earthy
translucent,opaque	red,grey,brown	adamantine,metallic
transparent,translucent	grey-white,pale green,pink	vitreous
translucent	silver,reddish	metallic
transparent,translucent	white,pink,red	adamantine,vitreous
opaque	black,	metallic
opaque	red,brown tarnish	metallic
transparent,translucent	blue,green,violet,yellow	vitreous,dull
transparent,translucent,opaque	brown,pink,blue,white,green,red	adamantine,vitreous
opaque	blue-black	resinous
translucent	white,colorless	vitreous
translucent	red,orange	vitreous
translucent	red,brown,colorless,white,black	vitreous,pearly
translucent,opaque	red	adamantine
transparent	colorless, pale yellow	vitreous
transparent,translucent	colorless,white,tint	vitreous
transparent,translucent	colorless	adamantine
transparent,translucent	pale pink,grey,green	*
transparent,translucent	colorless,green,black,grey,yellow	vitreous
transparent,translucent	emerald,green	vitreous
transparent,translucent	white,tint	vitreous,pearly
translucent	blue,violet,red-brown	vitreous
opaque	grey,black,steel	metallic
translucent,opaque	grey,green,yellow,brown,black	vitreous,pearly
translucent,opaque	yellow green,black green	vitreous
transparent,translucent	colorless,white	vitreous
transparent,translucent	red,grey	vitreous,pearly
transparent,translucent	colorless,green,blue,yellow,white	vitreous
translucent,opaque	red-brown,black	metallic,dull
transparent,translucent	purple,colorless,green,yellow,blue,red	vitreous
opaque	steel black	metallic
opaque	grey	metallic
transparent,translucent,opaque	violet,red,yellow,green,black	resinous,vitreous
opaque	white,green,blue	dull
transparent,translucent	white,yellowish,red	vitreous,greasy
translucent,opaque	blue green	dull,greasy
translucent	blue,black,green	vitreous,pearly
translucent,opaque	brown,black,yellow,red	adamantine
opaque	yellow-gold	metallic
opaque	black	metallic,dull
translucent	yellow,y-orange	adamantine,resinous
transparent,translucent	colorless,white,grey,yellow	pearly
transparent,translucent	colorless,white,tint	vitreous
translucent	white,grey,yellow,red	vitreous

Sheet1

translucent,opaque	grey,blue,brown-black	metallic,vitreous
transparent,translucent	blue,grey,green,red,yellow	vitreous,resinous
opaque	tin,steel,red	metallic,earthy
transparent,translucent,opaque	white,yellow,brown,green	vitreous
transparent,translucent	white,red,brown	vitreous,pearly
opaque	black,green,brown-black	vitreous
opaque	colorless,white,pale yellow	dull,silky
opaque	black,dark brown	sub metallic
opaque	steel grey,black	metallic
translucent,opaque	green,white,pale violet	vitreous,pearly
opaque	red,brown,yellow,green,blue,black	dull
opaque	white,grey,yellow	dull
translucent,opaque	colorless,white	vitreous,pearly
transparent,translucent,opaque	blue,white	pearly
translucent,opaque	grey-brown	vitreous
transparent,translucent	white,red,yellow,blue	vitreous,pearly
translucent,opaque	blue	vitreous
translucent	blue,blue green	vitreous
translucent	red,violet,white	pearly
translucent,opaque	white,grey,colorless	vitreous,resinous
transparent,translucent,opaque	white,grey-white,yellow,brown	vitreous
opaque	steel,brown-black	metallic,dull
transparent,translucent,opaque	green	silky,vitreous
translucent,opaque	steel grey,black	metallic,vitreous
opaque	brassy yellow	metallic
transparent,translucent	pale pink,white,grey	pearly
opaque	silver	metallic
translucent,opaque	white,tint,green	vitreous
opaque	brassy yellow	metallic
translucent	pale yellow,brown,white	resinous
opaque	steel grey,blue tint	metallic
opaque	pale yellow,dark red-brown	resinous
transparent,translucent	white,yellow,green,silverish	pearly
transparent,translucent	white,yellow,pink	vitreous,pearly
transparent,translucent	white,colorless,pale grey	resinous,vitreous
opaque	copper-red,grey,(black tarnish)	metallic
translucent,opaque	white,green,red,grey,yellow	vitreous,pearly
transparent,translucent	green,yellow-green	vitreous
translucent,opaque	colorless,white,yellow,red,blue,green	resinous,pearly
translucent	yellow	resinous,pearly
transparent,translucent,opaque	white,grey,tint	vitreous,pearly
translucent	white,grey	vitreous,silky
transparent,translucent	green,blue green	pearly
opaque	bronze-yellow	metallic
transparent,translucent	white,grey,colorless	vitreous,pearly
transparent	colorless,pale-yellow,pink	vitreous
translucent	white,yellow,grey,red	vitreous
transparent,translucent	colorless,brown,red,white	pearly
transparent,translucent	colorless,white,grey,green,blue,red	vitreous,pearly

Sheet1

opaque	steel grey,silver	metallic
opaque	steel grey,iron black	metallic
translucent	red,white,yellow,green	vitreous,resinous
transparent,translucent	green,y-green,yellow,colorless,white	vitreous,pearly
translucent	red	adamantine
opaque	black,brown	metallic,dull
opaque	purple	silky
translucent,opaque	dark,red,blue-grey,black	metallic,adamantine
opaque	brassy brown,yellow	metallic
opaque	steel,dark-grey,black	mettalic,submetallic
translucent	green,yellow,brown,blue,red	resinous
translucent	white,green,grey,brown,yellow	pearly
opaque	brassy brown,yellow	metallic
transparent,translucent,opaque	colorless,white,blue,green,yellow,red	vitreous,resinous
translucent	red,orange	resinous,adamantine
translucent	pink,red,yellow,dark brown	vitreous,pearly
transparent,translucent,opaque	red,brown,green,yellow,black	vitreous
translucent,opaque	brown,black,red	metallic,adamantine
translucent,opaque	white,yellow,pink	vitreous,pearly
transparent,translucent	pale green,yellow	adamantine,resinous
transparent,translucent	white	vitreous,silky
translucent	colorless,green,blue,brown,yellow	vitreous,adamantine
opaque	white,yellowish	earthy
translucent,opaque	green,yellow,brown,black,red	resinous,dull
translucent,opaque	yellow,brown,bred,black	pearly, vitreous
transparent,translucent	grey-green,grey-yellow,brown	vitreous
opaque	silver-white	metallic
opaque	tin white,silver grey	metallic
translucent,opaque	white,green,yellow,brown	vitreous,pearly
transparent,translucent	blue,colorless,green,yellow,red	vitreous,resinous
opaque	steel grey	metallic
transparent,translucent	pale yellow,brown,black,red,green	resinous
transparent,translucent,opaque	yellow,green,brown,black	adamantine,resinous
transparent,translucent,opaque	white,red,blue,green,brown,black	vitreous
transparent,translucent	violet,pink,yellow,green	vitreous,pearly
translucent,opaque	brown,black	vitreous,resinous
opaque	iron black	metallic
opaque	lead grey,black	metallic
transparent,translucent	colorless,white,yellow,brown,red	vitreous,pearly
transparent,translucent	pale green,yellow,green,white	vitreous,resinous
transparent,translucent	yellow,brown	resinous
opaque	silver white	metallic
transparent	red,white,colorless	vitreous
transparent,translucent,opaque	green,green,white	pearly
translucent,opaque	grey black	metallic
transparent,translucent	white,brownish,green	vitreous
transparent,translucent,opaque	colorless,yellow,pink,blue,green	vitreous
transparent,translucent,opaque	brown,black,red,pink,green,blue,yellow	vitreous
transparent,translucent	colorless,white,green,green	vitreous

Sheet1

transparent,translucent	colorless,white	waxy
translucent,opaque	blue,blue green,grey-green	waxy
transparent	white	silky
opaque	steel black	sub metallic
transparent,translucent	red,brown,yellow	resinous
transparent,translucent	green-brown,red,yellow	vitreous
transparent,translucent	blue,green,white,colorless	pearly,vitreous
translucent	white,green,brown,yellow	vitreous,pearly
translucent	colorless,brown,red,yellow-brown,black	vitreous,resinous
translucent	white,yellow,grey	vitreous,resinous
translucent	white,grey,yellow,brown	pearly,vitreous
transparent,translucent	yellow,red,orange	resinous,adamantine
transparent,translucent	red	adamantine
transparent,translucent,opaque	colorless,brown,grey,green,red	adamantine
transparent,translucent	white,colorless,grey,green,brown,red	vitreous

Sheet1

STREAK,C,38	RANOTES,M
white	4
white	1
yellow,green	3
white	4
grey,green,brown	1
white	2
white	3
white	4
white,yellow	1
white	3
white	3
white	2
white,yellow-green	2
white	4
white	2
grey	1
white	4
white	2
white	3
blue,grey	3
white,yellow	2
grey	1
grey,black	2
green	2
white,grey	4
yellow	2
white	3
pale blue	3
white	3
white	3
white	4
silver white	1
dark grey	2
white	3
white	2
grey,black	2
grey,black	2
white,yellow,brown	1
white	2
white	4
white	2
pale yellow	2
white,yellow,light brown	2
white	3
white	2
white	3
pale blue	3
dark grey	2

Sheet1

green-black	4
colorless	4
white	3
brown	3
white	2
white,green-white	3
red	2
white	3
grey	2
white	2
black,dark red	2
red	1
white	2
white	3
black	2
white	1
orange yellow	1
white	1
red-brown,shiny,yellow	2
white	2
white	2
grey	1
white	2
white,grey	4
green	2
white,grey	4
white	2
black	2
grey,white	4
grey	3
white	3
red	1
white	2
dark brown	2
white	4
black,brown,red brown	1
grey	4
white	2
green-white	3
white	1
green	2
blue-grey,white	2
brown,yellow	3
yellow	1
black	2
red,orange	1
white	4
white	4
white	2

Sheet1

brown	1
white,pale blue	2
red,red-brown	4
white	2
white	3
pale: grey,green,brown-black	4
white	1
black,brown-red	1
grey	1
white	1
white	1
white	4
white	3
white	3
white	4
white	4
white	1
white,light blue	1
white	3
white	4
white	3
black	4
pale green	3
dark,red-brown	2
grey black	3
white	3
	1
white	4
green-black	1
white	2
grey black	2
white	3
white	4
white	3
white	4
brown-black	2
white	4
white	4
white	3
yellow	2
white	3
white	2
pale green	2
brown,black	2
white	3
white	1
white	3
white	4
white	4

Sheet1

silver grey	1
black	1
white,pink	1
white	3
red	1
brown-black,shiny,yellow	2
purple,blue	1
red	1
green-black	4
black	2
white,yellow	3
white	2
dark grey	3
white	4
red,orange	2
white,pink	3
white	2
pale yellow,green	2
white	3
white	2
white	3
white	2
white	3
white	4
white	4
white	3
brilliant silver	1
black	1
white	3
white	3
black	1
lt yellow,red brown	3
white	3
white	3
white	3
white,grey	3
iron black	2
grey black	3
white	3
white	1
pale yellow	2
grey	1
white	1
white	4
black,brown,red	2
white	2
white	3
white	3
white	4

Sheet1

white	1
white,pale green	2
white	2
brown-black	2
white,yellow	2
white	3
pale blue	2
white	1
white	1
white	1
white	2
white,pale yellow	2
orange	1
white	3
white	1