

Dictionary of Gems and Gemology

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Mohsen Manutchehr-Danai

Dictionary of GEMS and GEMOLOGY

With approximately 16000 entries



Springer

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To

Professor Dr. Jürgen Pense †
Professor Dr. Hilmar v. Platen

and to my son Human

Preface

Since World War II the amount of information generated in the science of Gemology has increased tremendously. Therefore this book „Dictionary of Gems and Gemology“ was written with the aim of providing a „relatively“ complete dictionary to assist all students, hobbyists, scientists and interested parties in the fields of Gems and Gemology.

The forerunner to this book was called „Dictionary of Gems and Gemology“ (English-Persian, Persian-English, published in Tehran-Iran in 1997). It was written with the aid of more than thirty reference books relating to gemology. In response to the effort required to clarify the terms within, I decided to compile a book that brings all the relevant terms into one book.

This new book eliminates the use of different reference books and compiles nearly all the relevant terms into a one-stop useful text. It took twenty five years to collect the terms and the information so as to present a complete and functional lexicon.

The text is supported by nearly 170 illustrations and 21 tables to provide detailed and succinct information.

I hope and trust that this book will reach the high standard of other gemological dictionaries.

If you have criticisms or suggestions, please feel free to contact me.

*Professor Dr. Mohsen Manutchehr-Danai
Los Angeles, Tehran, Regensburg*

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- De Beers CSO:** 1-Fire Rose Cut, 2-Dahlia Cut, 3-Marigold Cut, 4-Sunflower Cut, 5-Zinnia Cut
- Eppler, Praktische Gemmologie:** Highlight brilliant-cut, King Cut, Magna Cut and Royal 144 cut.
- Leitz-Wetzlar,** seven crystal systems.
- Liddicoat, GIA Diamond Dictionary:** American Brilliant-cut, Baguette cut, Ronelle cut, Tapered cut, Trielle cut, Whistle cut.
- Maier, Brillianten und Perlen:** situation of facets, Modified brilliant-cut, Peruzzi cut.
- Miller and Sinkankas, Standard Catalog of gems:** Honeycomb cut, refraction of light, star cut and Stepp-cut bead.
- Rössler, Lehrbuch der Mineralogie:** Round brilliant-cut.
- Schneider Idar-Oberstein,** gemological microscope.
- Vollstädt and Baumgärtel, Edelsteine:** Prismant.
- Webster and Read, Gems:** Cross rose-cut, blades of tortoise-shell.

Abbreviations and Symbols Used in the Text

Å	Ångström
a	cell edge in the x direction
Ab	albite $\text{NaAlSi}_3\text{O}_8$
Abbr.	abbreviation
α, β, γ	the three refractive indices in biaxial crystal from least, intermediate to greatest
Adj.	adjective
An	anorthite $\text{CaAl}_2\text{Si}_2\text{O}_8$
Ångström	0.1 nanometer
b	cell edge in the y direction
Birefringence	in uniaxial crystal is the difference between ω and ε . In biaxial crystal is the difference between α and γ
c	cell edge in the z direction
°C	degrees Celsius, a unit of temperature, known as centigrade
ct.	carat(s) or metric carat(s)
Diaphaneity	transparent or translucent, or opaque
ε	extraordinary ray in uniaxial crystal. Refractive index
Fa	fayalite FeSiO_4
Fo	forsterite MgSiO_4
H	hardness on the Mohs's scale
Hz	hertz SI unit of frequency (c/s)
Lat.	Latin
LWUV light	long-wave ultraviolet light
Malagasy	formerly Madagascar
Mt.	Mountain
Myanmar	formerly Burma
N.Y.	New York
Nanometer	10^{-9} meter
nm	nanometer
ω	ordinary ray in uniaxial crystal. Refractive index
Or	orthoclase KAlSi_3O_8
Pa-sec	Pascal-second
Port.	Portuguese
RI:	generally refractive index, also for cubic and amorphous substance
RI;	refractive indices of ω : ordinary ray, ε : extraordinary ray in uniaxial crystal
RI;	refractive indices of α : alpha, β : beta, γ : gamma in biaxial crystal
Russia	formerly Soviet Union
SG	specific gravity
Sri Lanka	formerly Ceylon
SWUV light	short-wave ultraviolet light
syn.	synonym
Thailand	formerly Siam
X []	X represent the number of formula units per unit cell
x, y, z	crystallographic axes
Zimbabwe	formerly Rhodesia
⊖	optically negative, when ε is greater than ω in uniaxial crystal. In biaxial, when intermediate refractive index β is near to γ than α
⊕	optically positive, when ω is greater than ε in uniaxial crystal. In biaxial, when intermediate refractive index β is near to α than γ
→	see

Every other author may aspire to praise;
the lexicographer can only hope to escape reproach.

Dr. Samuel Johnson