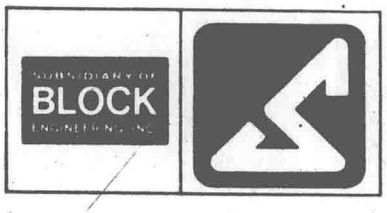

SADTLER RESEARCH LABORATORIES, INC.

COMMONLY ABUSED DRUGS

vol. 1

CREATIVE CHEMISTS SINCE 1874

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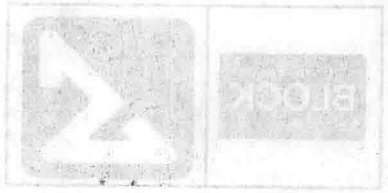


The publication of the physical data of the Sadtler Standard Spectra and the Sadtler Commercial Spectra is intended to be descriptive. The samples of the materials represented have come generally from other sources than our own laboratories and frequently without the donors' knowledge of their part in this publication.

On the other hand every effort is made by Sadtler Research Laboratories, Inc. to assure the reliability of the published spectra. When improved data is available or errors are called to our attention we revise and reissue the proper replacement spectra.

SADTLER RESEARCH LABORATORIES, INC. DOES NOT WARRANT MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, OR MAKE ANY OTHER WARRANTY OR AGREEMENT EXPRESS OR IMPLIED WITH RESPECT TO THE SPECTRA CONTAINED HEREIN. IF ANY MODEL OR SAMPLE WAS SHOWN TO BUYER, SUCH MODEL OR SAMPLE WAS USED MERELY TO ILLUSTRATE THE ARTICLE AND NOT TO REPRESENT THAT ANY SPECTRA CONTAINED HEREIN WOULD CONFORM TO THE MODEL OR SAMPLE.

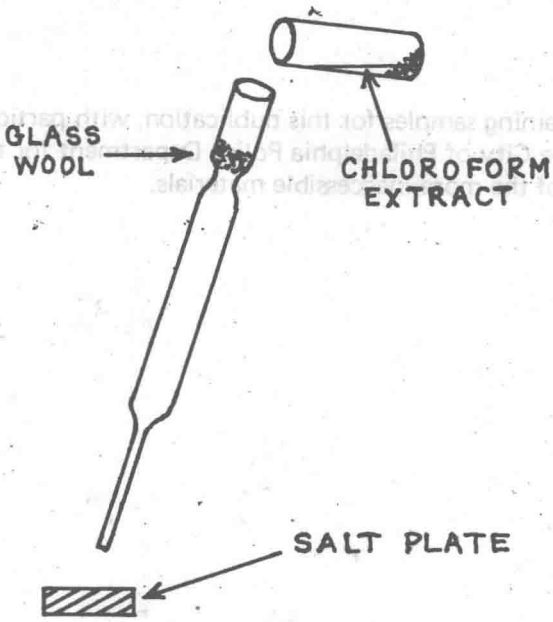
COMMONLY ABUSED DRUGS
GRATING INFRARED SPECTRA

This collection contains spectral data on 300 drugs which are frequently misused or liable to misuse. The compounds represented are predominatly brand name drugs in dosage form with some drugs in bulk supply form and some Schedule 1 narcotics. The final twenty mixtures in this collection are street drugs, that is, mixtures of narcotics which have been unlawfully prepared.

The data in this publication has been developed to provide the chemist with a rapid method of characterizing drugs through a simple preparation technique, without the time necessary for prolonged procedures such as chromatographic separation. The simple preparation procedure is described below in the Experimental section. The use of this procedure is not intended to identify all active ingredients of a given product, reference spectra of pure pharmaceutical ingredients are available in other publications.

EXPERIMENTAL

The sample preparation procedure was as follows:



The complete pill, capsule contents or supplied sample was ground and to the total powdered sample was added 5 ml of chloroform and sufficient ammonia or caustic soda to render the mixture alkaline. The mixture was dried by shaking with a neutral drying agent, e.g. molecular sieves. The dried chloroform extract was then filtered onto a salt plate and evaporated to form a film on the plate. * The residue from the extraction was preserved. The infrared spectrum of the film was measured immediately, (standing in air could cause decomposition).

The undissolved residue from the basic extraction was remixed with 5 ml of chloroform and sufficient HCl to render this mixture acidic. The drying, filtering and evaporation procedures were repeated on this extract and the spectrum of the acidic extract measured immediately.

* The evaporation technique occasionally resulted in a powdered sample forming on the salt plate; in these circumstances the powder was scraped from the plate and a KBr pellet prepared for running the spectrum.

SPECTRA PRESENTATION

All spectra were prepared on a Perkin Elmer 621 grating spectrophotometer in the 4000 cm^{-1} to 300 cm^{-1} region and are presented on a linear transmittance vs. wave number format. The scans of basic extract and acidic extract for each compound are labelled accordingly and shown on the same page as the descriptive data.

The spectra have been arranged in ascending sequence according to the value of the strongest absorption band in the basic scan, thus spectrum AD 1 has its strongest band at 690 cm^{-1} and spectrum AD 280 its strongest band at 3400 cm^{-1}. Spectra AD 281 - AD 300 are arbitrary street mixtures and are separated at the end of the publication. The arrangement of spectra by absorption characteristics will aid the user in obtaining rapid matches with his unknown spectrum.

DATA PRESENTATION

The trade name and dosage form of each drug is shown above the corresponding spectra together with the generic or chemical name when available. A brief description of the tablet or capsule and identifying markings is included and the manufacturer of the material when known. The reference text for much of the data is the Physicians' Desk Reference, 26th Edition, 1972.

INDEXES

The two indexes which accompany this spectra collection are:

(a) The Alphabetical Index listing the contents according to trade name, generic or chemical name and

(b) The Grating Specfinder Index which lists the spectra in sequence according to the locations of their strongest absorption bands. Instructions on using the Specfinder are included with the index.

ACKNOWLEDGEMENTS

We thank the many people who helped us in obtaining samples for this publication, with particular thanks to the staff of the Crime Laboratory of the City of Philadelphia Police Department for their help in providing and supervising the preparation of the more inaccessible materials.

NOTE: THIS PUBLICATION IS INTENDED SOLELY FOR THE INFORMATION OF PERSONS WORKING WITH THE PROBLEM OF DRUG ABUSE.

	GRATING
A.P.C. WITH DEMEROL	AD 99K
ALERT-PEP CAPSULES	AD100K
ALURATE 500MG	AD217K
ALVODINE 50MG.	AD203K
AMOBARBITAL USP 30GM.	AD141K
AMPHETAMINE SULFATE, BUTABARBITAL, PENTOBARBITAL, SECOBARBITAL AND PHENOBARBITAL ARBITRARY MIXTURE	AD289K
AMYTAL SODIUM 0.2GR.	AD146K
AMYTAL SODIUM 1GR.	AD121K
AMYTAL SODIUM 65MG.	AD145K
AMYTAL 0.5GR.	AD142K
AMYTAL 0.75GR.	AD143K
AMYTAL 1.5GR.	AD144K
ANADROL 2.5MG.	AD227K
APPETROL	AD147K
APPETROL-S.R.	AD148K
ATARAX 10MG.	AD224K
ATARAX 100MG.	AD 22K
ATARAX 25MG.	AD225K
AVENTYL HYDROCHLORIDE 10MG.	AD248K
AVENTYL HYDROCHLORIDE 25MG.	AD 9K
B AND O SUPPRETTES 60/15	AD 23K
BAMADEX	AD122K
BETA-CHLOR	AD249K
BIPHETAMINE 7.5	AD 28K
BIPHETAMINE-T.20	AD123K
BONTRIL TIMED NO.1	AD228K
BONTRIL TIMED NO.2	AD229K
BUFOTENIN BIOXALATE	AD 63K
BUTABARBITAL AND SECOBARBITAL ARBITRARY MIXTURE	AD292K
BUTABARBITAL, PENTABARBITAL AND SECOBARBITAL ARBITRARY MIXTURE	AD291K
BUTICAPS 0.75GR.	AD150K
BUTISOL R-A 30MG.	AD149K
BUTISOL SODIUM 100MG.	AD153K
BUTISOL SODIUM 15MG.	AD151K
BUTISOL SODIUM 50MG.	AD152K
CAFFEINE	AD181K
CALCIDRINE SYRUP	AD250K
CARBRITAL ELIXIR	AD155K
CARBRITAL HALF STRENGTH P-D 376	AD182K
CARBRITAL P-D 372	AD154K
CHLOR-TRIMETON 12MG.	AD251K
COCAINE AND PROCAINE HCL	AD 53K
COCAINE BASE AND COCAINE HYDROCHLORIDE ARBITRARY MIXTURE	AD283K
COCAINE HYDROCHLORIDE	AD195K
CODALAN NO.3	AD 97K
CODEINE PHOSPHATE 1GR.	AD 17K
CODEINE SULFATE 30MG.	AD 69K
CODEINE SULFATE 60MG.	AD 18K
CODEMPIRAL NO.2	AD 12K
CODEMPIRAL NO.3	AD 33K
COMPAZINE SPANSULES 30MG.	AD239K
COMPAZINE SYRUP	AD252K
COMPOZ	AD 82K
COPAVIN	AD 79K
CORICIDIN WITH CODEINE 0.25GR.	AD 49K
CORICIDIN WITH CODEINE 0.5GR.	AD101K
COSANYL COUGH SYRUP	AD240K
DALMANE 30MG.	AD117K
DAPRISAL	AD 13K

	GRATING
DARVO-TRAN	AD 34K
DARVON COMPOUND	AD 14K
DARVON COMPOUND-65	AD102K
DARVON WITH ASA	AD 36K
DARVON 32MG.	AD218K
DARVON 65MG.	AD204K
DARVON-N 100MG.	AD205K
DASIN CAPSULES	AD108K
DEMEROL APAP	AD103K
DEMEROL HYDROCHLORIDE 100MG.	AD206K
DEPROL	AD156K
D-DESOXYEPHEDRINE HCL 1GM.	AD 1K
DESOXYN 15MG.	AD219K
DESOXYN 5MG.	AD220K
DEXAMYL	AD124K
DEXAMYL SPANSULE NO.1	AD253K
DEXAMYL SPANSULE NO.2	AD254K
DEXEDRINE SPANSULE 15MG.	AD255K
DEXEDRINE SPANSULE 5MG.	AD231K
DIDREX 50MG.	AD 2K
DIETHYLTRYPTAMINE OXALATE	AD 7K
DIHYDROCODEINON BITARTRATE NF	AD207K
DIHYDROMORPHINONE HCL USP	AD230K
DIMETHOXYAMPHETAMINE, 2,5-,	AD 39K
DIMETHYLTRYPTAMINE	AD 8K
DIPHENOXYLATE HYDROCHLORIDE	AD208K
DONNAGESIC NO.1 EXTENTABS	AD232K
DONNAGESIC NO.2 EXTENTABS	AD241K
DORIDEN 0.125GM.	AD157K
DORIDEN 0.25GM.	AD158K
DORIDEN 0.5GM.	AD159K
DORIDEN 0.5GM.	AD125K
EDRISAL	AD 40K
EDRISAL WITH CODEINE 0.25GR.	AD 42K
EDRISAL WITH CODEINE 0.50GR.	AD 50K
ELAVIL HYDROCHLORIDE 10MG.	AD256K
ELAVIL HYDROCHLORIDE 25MG.	AD 10K
EMPIRAL	AD 11K
EMPIRIN COMPD WITH CODEINE NO.2	AD 84K
EMPIRIN COMPD WITH CODEINE NO.3	AD104K
EMPIRIN COMPD WITH CODEINE NO.4	AD 93K
EPHEDRINE AND AMYTAL	AD184K
EPHEDRINE AND AMYTAL	AD183K
EPHEDRINE AND SECONAL SODIUM	AD185K
EPHEDRINE SULFATE CAPS 25MG.	AD274K
EPHEDRINE SULFATE CAPS. 50MG.	AD 5K
EQUAGESIC	AD126K
EQUANIL L-A	AD160K
EQUANIL 400MG.	AD127K
ESKABARB SPANSULE 1.5GR.	AD257K
ESKABARB SPANSULE 1GR.	AD186K
ESKAPHEN B	AD161K
ETHOBRAL	AD162K
ETHYLMORPHINE HYDROCHLORIDE USP	AD 57K
EXCEDRIN	AD 94K
FIORINAL	AD105K
FIORINAL	AD106K
FIORINAL WITH CODEINE NO.2	AD107K
HARMONYL	AD187K
HEROIN /FREE BASE/	AD 37K
HEROIN AND PHENYLPROPANOLAMINE ARBITRARY MIXTURE	AD282K
HEROIN AND QUININE HCL	AD 43K
HEROIN HCL, METHAMPHETAMINE HCL AND COCAINE HCL ARBITRARY MIXTURE	AD286K
HEROIN HYDROCHLORIDE AND CAFFEINE ARBITRARY MIXTURE	AD287K
HEROIN, QUININE HCL, METHAPYRILENE HCL AND MANNITOL ARBITRARY MIXTURE	AD293K

	GRATING
HEROIN, QUININE HCL, PROCAINE AND MANNITOL HCL ARBITRARY MIXTURE	AD297K
HEROIN,QUININE HYDROCHLORIDE STRYCHNINE AND MANNITOL ARBITRARY MIXTURE	AD290K
HYDROCORDONE BITARTRATE	AD209K
HYDRYLLIN COMPOUND	AD258K
HYPTRAN TABS	AD210K
IBOGAINE HYDROCHLORIDE	AD 71K
IONAMIN 15 /PHENTERMINE 15MG./	AD 31K
IONAMIN 30 /PHENTERMINE 30MG./	AD259K
KESSODRATE CAPSULES 250MG.	AD 24K
KESSODRATE CAPSULES 500MG.	AD 20K
LERITINE DIHYDROCHLORIDE	AD221K
LERITINE 25MG.	AD211K
LEVO-DROMORAN	AD 15K
LEVOMOR	AD269K
LIBRITABS 10MG.	AD 90K
LIBRITABS 25MG.	AD 91K
LIBRITABS 5MG.	AD 89K
LIBRIUM 25MG.	AD 92K
LOMOTIL	AD 3K
LOMOTIL LIQUID	AD280K
LOTUSATE 2GR.	AD143K
LSD LYSERGIC ACID DIETHYLAMIDE	AD 88K
LSD AND PHENCYCLIDINE /PEACE PILL/ ARBITRARY MIXTURE	AD288K
LUMINAL 0.25GR.	AD188K
LUMINAL 0.50GR.	AD196K
LUMINAL 1.5GR.	AD189K
MARIJUANA	AD260K
MEBARAL 0.5GR.	AD197K
MEBARAL 1.5GR.	AD129K
MEBARAL 3GR.	AD198K
MEBARAL 50MG.	AD128K
MEDOMIN 213MG.	AD164K
MELLARIL 50MG.	AD 58K
MEPERGAN	AD212K
MEPERGAN FORTIS	AD213K
MEPROSPAN-200MG.	AD130K
MEPROSPAN-400MG.	AD131K
MESCALINE SULFATE	AD 32K
METHADONE HYDROCHLORIDE	AD .4K
METHADONE HYDROCHLORIDE 10MG.	AD 6K
METHAMPHETAMINE AND ASCORBIC ACID ARBITRARY MIXTURE	AD298K
METHAMPHETAMINE HCL AND AMPHETAMINE SULFATE ARBITRARY MIXTURE	AD299K
METHAMPHETAMINE HCL AND COCAINE HCL ARBITRARY MIXTURE	AD285K
METHAMPHETAMINE HCL AND METHYLENEDIOXYAMPHETAMINE HCL /MDA/ ARBITRARY MIXTURE	AD284K
METHAMPHETAMINE HCL AND PROCAINE HCL ARBITRARY MIXTURE	AD295K
METHAMPHETAMINE HYDROCHLORIDE	AD262K
METHAMPHETAMINE HYDROCHLORIDE AND METHENAMINE ARBITRARY MIXTURE	AD281K
METHAQUALONE HYDROCHLORIDE	AD132K
4-METHYL-2,5-DIMETHOXYAMPHETAMINE	AD 38K
METHYLENEDIMETHOXYAMPHETAMINE HCL AND REDUCING SUGAR ARBITRARY MIXTURE	AD296K
METOPON 3MG.	AD222K
MILTOWN 400MG.	AD133K

	GRATING
MORPHINE SULFATE /PURE/	AD233K
NEBRALIN	AD 44K
NEMBU-DONNA 0.25	AD165K
NEMBU-DONNA 0.5	AD166K
NEMBU-GESIC	AD190K
NEMBUDEINE 0.5GR.	AD 85K
NEMBUTAL SODIUM CAPSULES .75GR.	AD169K
NEMBUTAL 1.5GR.	AD134K
NEMBUTAL 50MG.	AD168K
NEO-SEDAPHEN LIQUID	AD191K
NIDAR	AD170K
NO DOZ	AD171K
NOCTEC 250MG.	AD261K
NOCTEC 500MG.	AD 25K
NOLUDAR 200MG.	AD110K
NOLUDAR 300MG.	AD111K
NOLUDAR 50MG.	AD109K
NOVAHISTINE DH	AD262K
NUCODAN	AD 64K
NUMORPHAN 10MG.	AD243K
OBEDRIN	AD192K
OBEDRIN-LA	AD172K
OBESTAT	AD173K
OPIUM NF	AD 54K
OXYCODONE HYDROCHLORIDE 50MG	AD 75K
PANTOPON 0.33GR.	AD 55K
PAPAVERINE HYDROCHLORIDE 1.5GR.	AD 81K
PARACODIN	AD244K
PARAFON WITH CODEINE	AD223K
PAREST-200	AD135K
PAREST-400	AD118K
PENTAZINE	AD174K
PENTOBARBITAL SODIUM 1.5GR.	AD112K
PERCOBARB	AD113K
PERCODAN	AD 95K
PERCOGESIC-C	AD 98K
PHANTOS	AD 16K
PHENAPHEN WITH CODEINE NO.2	AD 45K
PHENAPHEN WITH CODEINE NO.3	AD 46K
PHENAPHEN WITH CODEINE NO.4	AD 47K
PHENAZOCINE HYDROBROMIDE 10MG	AD263K
PHENCYCLIDINE /PURE/	AD167K
PHENCYCLIDINE AND PROCAINE HYDROCHLORIDE ARBITRARY MIXTURE	AD300K
PHENERGAN VC EXPECTORANT WITH CODEINE	AD 65K
PHENOBARBITAL 1GR.	AD279K
PLACIDYL 1GM.	AD199K
PLACIDYL 100MG.	AD 26K
PLACIDYL 500MG.	AD275K
POLARAMINE SYRUP	AD 76K
PONSTEL 250MG.	AD 51K
PRE-SATE 65MG.	AD245K
PRELUDIN EDURETS 75MG.	AD265K
PRELUDIN ENDURETS 25MG.	AD264K
PROZINE CAPSULES	AD175K
PROZINE HALF STRENGTH CAPSULES	AD176K
PRYDON SPANSULE 0.4MG.	AD266K
PRYDONNAL SPANSULE	AD214K
PYRIBENZAMINE AND EPHEDRINE	AD 73K
PYRIBENZAMINE 100MG.	AD267K
PYRIBENZAMINE 25MG.	AD 72K
PYRIBENZAMINE 50MG.	AD234K
QUAALUDE-150	AD 86K
QUAALUDE-300	AD 87K

	GRATING
RITALIN 10MG.	AD215K
RITALIN 20MG.	AD268K
RITALIN 5MG.	AD 21K
ROBITUSSIN A-C	AD 77K
ROBITUSSIN DM	AD 78K
SECOBARBITAL AND AMOBARBITAL ARBITRARY MIXTURE	AD294K
SECOBARBITAL SODIUM USP 30GM.	AD177K
SECOBARBITAL SODIUM 1.5GR.	AD136K
SECONAL SODIUM PULVULE 1.5GR.	AD193K
SECONAL 0.75GR.	AD200K
SERAX 10MG.	AD277K
SERAX 15MG.	AD278K
SERAX 30MG.	AD276K
SINUTAB WITH CODEINE	AD 80K
SLEEP-EZE	AD 66K
SOMA COMPOUND	AD178K
SOMA COMPOUND WITH CODEINE	AD179K
SOMBULEX	AD114K
SOMINEX	AD 52K
SOMNAFAC CAPSULES	AD137K
STELAZINE 1MG.	AD 27K
STELAZINE 10MG.	AD 56K
STELAZINE 2MG.	AD 29K
STELAZINE 5MG.	AD 30K
SULFAMETHAZINE	AD 83K
SYNALGOS-DC CAPSULES	AD 48K
SYNATAN	AD 19K
SYNDROX TABLETS	AD246K
SYNTIL	AD194K
T.T. CODEINE SULFATE NF 15MG.	AD238K
T.T. CODEINE SULFATE NF 30MG.	AD 70K
TALWIN 50MG.	AD270K
TENUATE DOSPAN 75MG..	AD119K
TEPANIL 25MG.	AD138K
THEBAINE ALKALOID 10MG /OPIUM DERIVATIVE	AD 41K
THORAZINE 10MG.	AD 59K
THORAZINE 100MG.	AD 62K
THORAZINE 25MG.	AD 60K
THORAZINE 50MG.	AD 61K
TOFRANIL 10MG.	AD 67K
TOFRANIL 25MG.	AD 74K
TOFRANIL 50MG.	AD 68K
TRANCOPAL 100MG.	AD115K
TRANCOPAL 200MG.	AD 96K
TUINAL PULVULE 302	AD139K
TUINAL PULVULE 303	AD180K
TUINAL PULVULE 304	AD201K
TUSSEND	AD235K
TUSSIONEX	AD247K
TYLENOL WITH CODEINE NO.2	AD231K
TYLENOL WITH CODEINE NO.3	AD272K
VALIUM 10MG.	AD120K
VALIUM 5MG.	AD140K
VALMID 7.5GR.	AD202K
VISTARIL 100MG.	AD226K
VISTARIL 25MG.	AD236K
VISTARIL 50MG.	AD273K
WILPO 8MG.	AD237K
ZACTANE 75MG.	AD216K
ZACTIRIN AND ASPIRIN	AD 35K
ZACTIRIN COMPOUND	AD116K

ABUSED DRUGS GRATING SPEC-FINDER

SADTLER COMMERCIAL GRATING SPECTRA SPEC-FINDER®

The Sadtler Commercial Grating Spectra Spec-Finder provides a method of rapidly locating commercial reference spectra which have absorption peaks similar to an unknown spectrum. Having compared the unknown and found the number of the corresponding Sadtler spectrum in the Spec-Finder, it should be compared with the reference spectrum to verify the identification or assist in showing variations or impurities.

The Spec-Finder is arranged by coding the wave number location of the strongest band within each two hundred wave number interval from 3600 cm^{-1} to 2000 cm^{-1} and within each one hundred wave number interval from 2000 cm^{-1} to 400 cm^{-1}, then recording the wave number location of the strongest band in the whole spectrum. The accuracy tolerance in the plotting of the band location is $\pm$ 15 cm^{-1}.

The code values for each spectrum are computer-sorted into increasing numerical sequence. Then, within a group of spectra which have the same strongest band value, the secondary sorting sequence is according to numerical ascendancy of the band codes across the 2000 cm^{-1} to 400 cm^{-1} wave number region.

In the Spec-Finder the wave number location of the strongest band is shown under the heading STRONGEST BAND. The locations of the strongest band in each interval across the spectrum are shown under the relevant heading in the WAVE NUMBER REGION.

NOTE: Due to space limitations it has been necessary to abbreviate the entries in the WAVE NUMBER REGIONS; the abbreviations are explained as follows:

3600 cm^{-1} to 2200 cm^{-1} WAVE NUMBER REGION

A single digit number in any of these columns with a zero added, represents the last two digits of the band location, e.g., a 5 in the column 28 means that the strongest band is located at 2850 cm^{-1}.

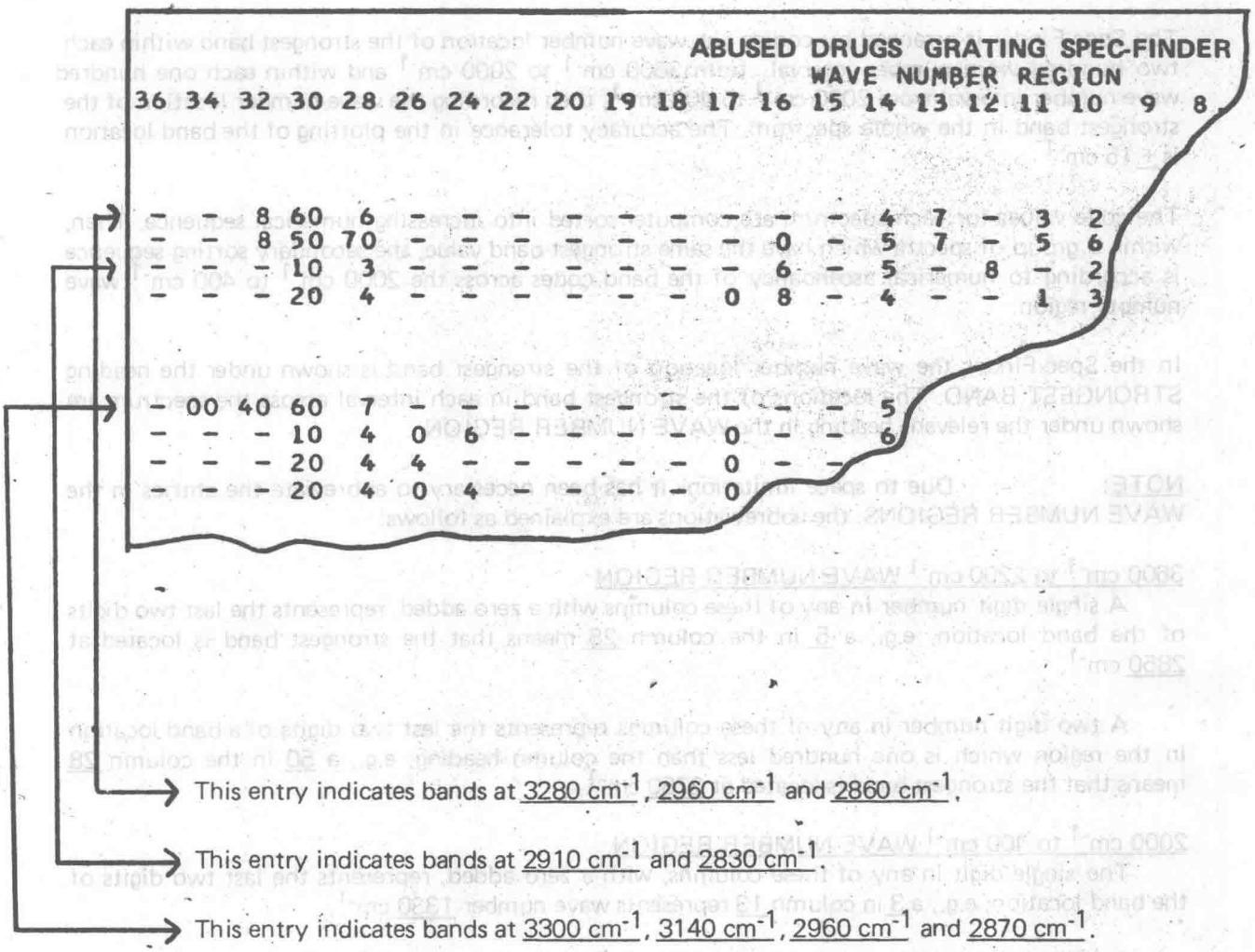
A two digit number in any of these columns represents the last two digits of a band location in the region which is one hundred less than the column heading, e.g., a 50 in the column 28 means that the strongest band is located at 2750 cm^{-1}.

2000 cm^{-1} to 400 cm^{-1} WAVE NUMBER REGION

The single digit in any of these columns, with a zero added, represents the last two digits of the band location, e.g., a 3 in column 13 represents wave number 1330 cm^{-1}.

A dash in any column indicates the absence of any absorption band greater than 0.20 absorbance in that region.

ILLUSTRATION OF ABBREVIATION CODES
IN THE 3600 cm^{-1} TO 2200 cm^{-1} WAVE NUMBER REGION



This entry indicates bands at 3280 cm^{-1}, 2960 cm^{-1} and 2860 cm^{-1}.

This entry indicates bands at 2910 cm^{-1} and 2830 cm^{-1}.

This entry indicates bands at 3300 cm^{-1}, 3140 cm^{-1}, 2960 cm^{-1} and 2870 cm^{-1}.

HOW TO USE THE SPEC-FINDER

Step One: Code the spectrum of the unknown. This is done by selecting in sequence the strongest band occuring in each 200 cm^{-1} region from 3600 cm^{-1} to 2000 cm^{-1} and in each 100 cm^{-1} region from 2000 cm^{-1} to 400 cm^{-1}. Signify the absence of a band in any interval by entering a dash in the relevant space on the coding slip. The position of the band should be determined to the closest 10 wave numbers. Bands having an absorbance of less than 0.20 should be ignored.

Step Two: Select the strongest band from the bands of the unknown which have been coded; this is the band which has the greatest intensity by maximum absorption. Enter the strongest band value in the appropriate space on the coding slip.

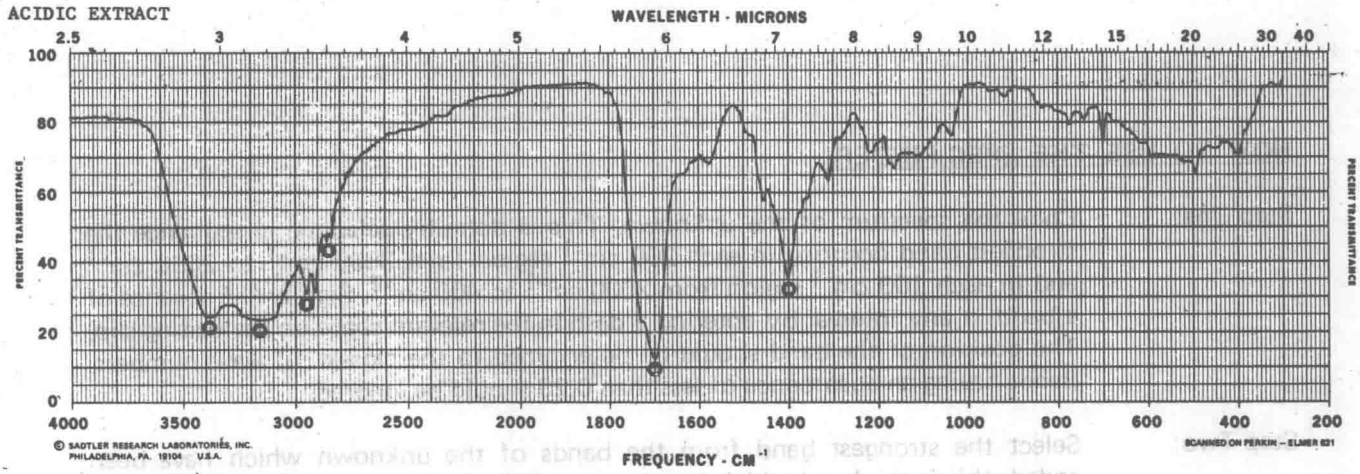
Step Three: Match the values of the coded bands of the unknown to the values of the reference spectra in the Spec-Finder. First, refer to the list of reference spectra having a strongest band the same as the spectrum of the unknown. Then, match the values of the unknown with the listed reference spectra proceeding across the page from the 2000 cm^{-1} to the 400 cm^{-1} intervals. Absence of bands in any interval is indicated by a dash in the Spec-Finder. When comparing codes allow a tolerance of $\pm$ 10 cm^{-1} in each case.

Notes:

In summary, in order to avoid erroneous results, remember the following parameters:

1. Do not code any band which has an absorbance of less than 0.20.
2. When coding any wavelength which has the first two digits 35, 33, 31, 29, 27, 25 or 23 follow the procedure shown in the example on page 1.
3. When comparing the codes of the unknown against the Spec-Finder codes allow a tolerance of $\pm$ 10 cm^{-1}.

The two examples on the following page will illustrate the use of Commercial Spec-Finder.



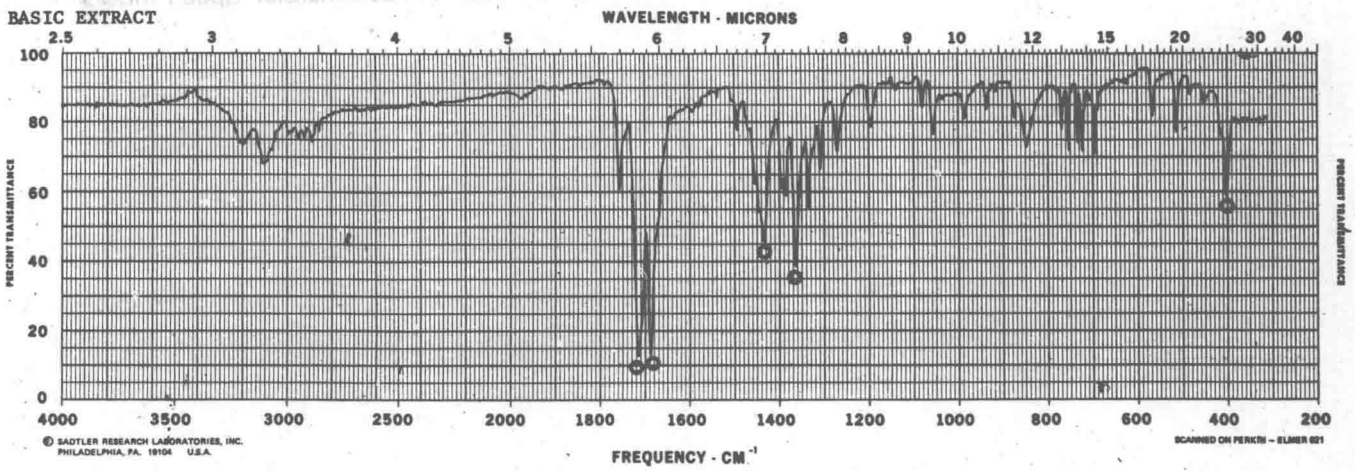
BANDS CODED: 3380 cm^{-1}, 3160 cm^{-1}, 2950 cm^{-1}, 2860 cm^{-1}, 1700 cm^{-1}, 1400 cm^{-1}

STRONGEST BAND: 1700 cm^{-1}

BANDS CODED: 1710 cm^{-1}, 1690 cm^{-1}, 1430 cm^{-1}, 1360 cm^{-1}, 400 cm^{-1}

STRONGEST BAND: 1710 cm^{-1}

Note: *Compare 2000 cm^{-1} to 400 cm^{-1} against* **WAVE REGION NUMBER.**



ABUSED DRUGS GRATING SPEC-FINDER

WAVE NUMBER REGION

36	34	32	30	28	26	24	22	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	STRONGEST BAND	GRATING NUMBER
-	-	0	20	6	-	-	-	-	-	-	4	9	-	2	1	1	-	-	-	1	-	-	-	9	1690	AD 172 K
-	-	0	40	6	-	-	-	-	-	-	5	9	-	2	1	1	-	-	-	-	-	-	-	-	1690	AD 165 K
-	-	0	9	7	-	-	-	-	-	-	5	9	-	2	1	1	-	-	-	0	-	-	-	8	1690	AD 153 K
-	-	0	9	7	-	-	-	-	-	-	5	9	-	2	1	1	-	-	-	1	-	-	-	8	1690	AD 151 K
-	-	0	9	8	-	-	-	-	-	-	5	9	-	2	1	1	-	-	-	1	-	-	-	9	1690	AD 153 K
-	-	1	70	8	-	-	-	-	-	-	5	9	-	2	1	1	-	-	-	1	-	-	-	9	1690	AD 168 K
-	-	80	10	4	-	-	-	-	-	-	5	9	-	2	1	1	-	1	-	-	-	-	-	9	1690	AD 192 K
-	-	0	9	7	-	-	-	-	-	-	5	9	-	2	1	3	-	-	-	4	-	-	-	9	1690	AD 144 K
-	-	0	8	-	-	-	-	-	-	-	5	9	-	3	-	-	-	-	-	-	-	-	-	-	1690	AD 146 K
-	-	0	40	6	-	-	-	-	-	-	5	9	-	3	1	1	-	-	-	-	-	-	-	9	1690	AD 174 K
-	-	0	8	6	-	-	-	-	-	-	5	9	-	3	1	1	-	-	-	-	-	-	-	9	1690	AD 194 K
-	-	1	70	8	-	-	-	-	-	-	5	9	-	3	1	1	-	-	-	1	-	-	-	0	1690	AD 152 K
-	-	90	8	6	-	-	-	-	-	-	5	9	-	3	1	1	-	-	-	1	-	-	-	9	1690	AD 150 K
-	-	0	9	7	-	-	-	-	-	-	5	9	-	3	1	3	-	-	-	4	-	-	-	9	1690	AD 146 K
-	-	90	00	4	-	-	-	-	-	-	5	9	-	3	1	4	-	-	-	-	-	-	-	9	1690	AD 254 K
-	-	2	40	5	-	-	-	-	-	-	5	9	-	3	1	4	-	-	-	4	-	-	-	9	1690	AD 142 K
-	-	1	20	5	-	-	-	-	-	-	5	9	-	3	2	1	-	-	-	1	-	-	-	9	1690	AD 149 K
-	-	2	80	6	-	-	-	-	-	-	5	9	-	3	2	4	6	-	-	4	-	7	-	9	1690	AD 142 K
-	-	0	8	6	-	-	-	-	-	-	5	9	-	3	5	2	-	3	6	2	5	8	5	9	1690	AD 279 K
-	-	0	60	7	-	-	-	-	-	-	5	9	-	5	6	9	8	-	1	3	5	-	-	-	1690	AD 190 K
-	-	1	70	8	-	-	-	-	-	-	5	9	4	3	1	1	4	-	-	1	-	-	-	0	1690	AD 151 K
-	-	90	8	9	-	-	-	-	-	-	6	9	-	3	2	-	-	-	-	-	-	-	-	9	1690	AD 145 K
-	-	80	80	-	-	-	-	-	-	-	6	9	0	1	6	4	9	4	1	3	5	6	-	-	1690	AD 106 K
-	90	-	20	5	-	-	-	-	-	-	0	-	-	-	8	-	-	-	-	-	-	-	-	-	1700	AD 191 K
-	80	60	50	6	-	-	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	1700	AD 191 K
-	-	60	20	-	-	-	-	-	-	-	0	-	-	0	4	-	-	-	-	-	-	-	-	-	1700	AD 188 K
-	-	0	8	4	-	-	-	-	-	-	0	-	-	0	6	2	-	-	-	-	-	-	0	0	1700	AD 257 K
-	-	1	9	-	-	-	-	-	-	-	0	-	-	0	6	2	-	-	-	-	6	-	-	9	1700	AD 189 K
-	-	2	20	4	-	-	-	-	-	-	0	-	-	1	4	-	-	-	-	-	-	-	-	-	1700	AD 188 K
-	-	0	10	4	-	-	-	-	-	-	0	-	-	1	4	-	-	-	-	-	-	-	5	9	1700	AD 196 K
-	-	4	20	6	-	-	-	-	-	-	0	-	-	1	4	1	5	4	-	0	5	9	5	9	1700	AD 214 K
-	-	4	70	4	-	-	-	-	-	-	0	-	-	1	4	2	-	-	-	0	6	9	0	0	1700	AD 196 K
-	-	0	60	-	-	-	-	-	-	-	0	-	-	2	1	-	-	-	-	-	-	-	-	-	1700	AD 194 K
-	-	0	8	-	-	-	-	-	-	-	0	-	-	2	1	1	-	-	-	-	-	-	-	-	1700	AD 169 K
-	-	1	50	6	-	-	-	-	-	-	0	-	-	2	1	1	-	-	-	-	-	-	-	9	1700	AD 165 K
-	-	2	00	4	-	-	-	-	-	-	0	-	-	2	1	1	7	3	3	-	9	9	1	9	1700	AD 291 K
-	-	2	00	4	-	-	-	-	-	-	0	-	-	2	2	1	-	-	-	-	-	-	1	9	1700	AD 291 K
-	-	2	40	-	-	-	-	-	-	-	0	-	-	2	2	1	-	-	-	-	-	1	9	9	1700	AD 292 K
-	-	3	20	4	-	-	-	-	-	-	0	-	-	2	4	-	-	-	-	-	-	-	-	-	1700	AD 189 K
-	1	4	20	4	-	-	-	-	-	-	0	-	-	2	5	-	-	-	-	-	-	-	0	0	1700	AD 164 K
-	-	2	60	7	-	-	-	-	-	-	0	-	-	2	5	1	-	-	-	-	8	-	-	9	1700	AD 170 K
-	-	2	8	6	-	-	-	-	-	-	0	-	-	2	5	1	-	-	-	-	9	9	1	9	1700	AD 292 K
-	-	0	60	6	-	-	-	-	-	-	0	-	-	2	5	1	5	0	3	-	6	9	5	9	1700	AD 294 K
-	-	0	9	4	-	-	-	-	-	-	0	-	-	2	5	2	-	-	-	-	6	9	5	9	1700	AD 16 K
-	-	-	00	4	-	-	-	-	-	-	0	-	0	0	5	2	9	5	-	-	8	-	5	-	1700	AD 241 K
-	-	0	10	4	-	-	-	-	-	-	0	-	3	1	5	1	-	2	-	-	-	-	9	9	1700	AD 192 K
-	-	2	60	7	-	-	-	-	-	-	0	-	4	2	5	1	-	-	-	-	8	-	-	9	1700	AD 162 K
-	-	80	8	6	-	-	-	-	-	-	0	-	5	1	5	5	0	3	5	4	8	-	2	9	1700	AD 187 K
-	-	90	50	6	-	-	-	-	-	-	0	-	5	2	1	8	-	-	-	-	-	-	-	-	1700	AD 184 K
-	-	2	70	8	-	-	-	-	-	-	0	-	5	2	5	1	-	-	2	-	8	9	1	9	1700	AD 162 K
-	-	1	70	8	-	-	-	-	-	-	0	-	5	4	2	2	5	5	-	2	-	-	2	1	1700	AD 150 K
-	-	2	70	8	-	-	-	-	-	-	0	-	9	9	5	6	9	3	0	0	5	9	3	3	1700	AD 128 K
-	-	2	60	-	-	-	-	-	-	-	0	0	-	5	7	-	9	-	-	-	-	-	-	-	1700	AD 190 K
-	-	3	60	7	-	-	-	-	-	-	0	4	4	2	5	7	-	-	-	-	7	-	-	9	1700	AD 193 K
-	-	-	-	-	-	-	-	-	-	-	0	4	4	8	-	3	-	-	-	-	4	-	-	-	1700	AD 171 K
-	-	-	-	-	-	-	-	-	-	-	0	4	4	8	-	3	-	-	-	-	4	-	-	-	1700	AD 171 K
-	-	1	60	7	-	-	-	-	-	-	0	4	6	2	5	8	-	-	2	-	8	-	2	0	1700	AD 185 K
-	-	2	20	5	-	-	-	-	-	-	0	6	-	1	9	9	7	-	-	2	6	8	-	8	1700	AD 186 K
-	-	6	50	-	-	-	-	-	-	-	0	6	2	1	2	4	8	6	7	4	4	0	2	-	1700	AD 179 K
-	-	-	-	-	-	-	-	-	-	-	0	6	5	8	-	4	-	-	-	-	4	-	-	-	1700	AD 181 K
-	-	-	8	-	-	-	-	-	-	-	0	8	-	3	6	-	-	-	-	-	-	-	-	-	1700	AD 128 K
-	0	-	30	-	-	-	-	-	-	-	1	-	-	5	2	8	1	4	-	-	1	-	-	-	1710	AD 195 K
-	80	8	20	5	-	-	-	-	-	-	1	-	9	4	6	5	4	5	3	-	-	2	-	-	1710	AD 199 K
-	-	00	00	4	-	-	-	-	-	-	1	0	0	1	5	2	2	3	-	-	0	-	6	9	1710	AD 289 K
-	-	4	80	8	-	-	-	-	-	-	1	4	-	2	6	1	-	-	2	1	8	1	0	9	1710	AD 163 K
-	-	1	60	6	-	-	-	-	-	-	1	8	-	0	4	7	-	-	2	0	7	-	0	8	1710	AD 200 K
-	-	2	60	-	-	-	-	-	-	-	1	8	-	1	4	-	-	-	-	-	-	-	-	-	1710	AD 201 K
-	2	-	-	-	-	-	-	-	-	-	1	8	-	3	6	-	-	-	-	-	-	-	-	-	1710	AD 198 K
-	3	-	-	-	-	-	-	-	-	-	1	8	-	3	6	-	-	-	-	-	2	-	-	-	1710	AD 198 K
-	-	-	-	-	-	-	-	-	-	-	1	9	-	3	6	-	-	-	-	-	-	-	-	-	1710	AD 197 K
-	-	-	-	-	-	-	-	-	-	-	1	9	-	3	6	-	-	-	-	-	-	-	-	-	1710	AD 197 K
-	80	6	20	4	-	-	-	-	-	-	1	9	9	4	6	5	4	4	1	-	7	2	8	-	1710	AD 202 K
-	80	7	20	5	-	-	-	-	-	-	1	9	9	4	6	5	4	4	1	-	7	2	8	-	1710	AD 199 K

ABUSED DRUGS GRATING SPEC-FINDER

WAVE NUMBER REGION																								STRONGEST BAND	GRATING NUMBER
36	34	32	30	28	26	24	22	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	
-	-	8	60	6	-	-	-	-	-	-	-	-	-	4	7	-	3	2	8	3	3	9	-	-	690	AD 274 K
-	-	8	50	70	-	-	-	-	-	-	-	0	-	5	7	-	5	6	-	-	4	9	2	-	690	AD 1 K
-	-	-	10	3	-	-	-	-	-	-	-	6	-	5	-	8	2	2	-	-	3	9	-	-	690	AD 2 K
-	-	-	20	4	-	-	-	-	-	-	0	8	-	4	-	-	1	3	-	-	6	9	-	-	690	AD 4 K
-	00	40	60	7	-	-	-	-	-	-	-	-	-	5	-	-	3	3	9	-	0	-	-	-	700	AD 5 K
-	-	-	10	4	0	6	-	-	-	-	0	-	-	6	-	-	-	-	4	-	0	-	-	-	700	AD 6 K
-	-	-	20	4	4	-	-	-	-	-	0	-	-	6	-	-	1	-	-	-	0	-	-	-	700	AD 4 K
-	-	-	20	4	0	4	-	-	-	-	0	-	-	6	7	-	3	8	4	-	0	-	-	-	700	AD 6 K
-	90	20	20	60	-	-	-	-	-	-	-	-	-	5	-	3	-	1	-	-	4	-	-	2	740	AD 8 K
-	0	20	60	0	-	-	-	-	-	-	-	-	-	6	5	3	1	9	-	-	4	-	8	2	740	AD 7 K
-	-	-	20	4	-	-	-	-	-	-	-	-	-	8	-	-	-	-	-	-	5	-	-	-	750	AD 248 K
-	-	-	10	80	-	-	-	-	-	-	-	-	-	8	6	-	3	-	-	-	5	3	9	-	750	AD 9 K
-	-	-	20	60	-	-	-	-	-	-	-	-	-	8	-	-	-	4	-	-	6	-	-	-	760	AD 10 K
-	-	8	80	6	-	-	-	-	-	-	0	5	0	4	8	6	0	4	-	3	3	0	1	-	830	AD 11 K
-	-	7	80	-	-	-	-	-	-	-	-	5	1	4	9	5	0	4	-	4	4	0	2	-	840	AD 14 K
-	-	7	70	8	-	-	-	-	-	-	0	6	1	4	9	5	1	4	2	4	4	0	2	-	840	AD 12 K
-	-	8	80	8	-	-	-	-	-	-	1	5	1	4	1	4	1	4	2	4	4	0	2	-	840	AD 13 K
-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	0	-	1	-	7	-	1000	AD 281 K
-	00	4	00	40	-	-	-	-	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	1020	AD 15 K
-	0	0	20	5	-	-	-	-	-	-	1	6	7	2	5	9	3	2	-	-	0	7	0	6	1020	AD 16 K
30	-	-	20	3	-	-	-	-	-	-	-	2	-	9	8	7	0	5	3	2	9	4	-	-	1050	AD 17 K
-	-	-	20	3	-	-	-	-	-	-	-	3	0	5	2	7	1	5	7	3	9	4	-	3	1050	AD 18 K
-	5	-	20	4	-	-	-	-	-	-	1	-	-	6	7	-	3	7	0	-	-	-	7	6	1070	AD 19 K
-	-	4	-	6	-	-	-	-	-	-	-	-	-	5	4	4	-	8	4	2	-	5	1	-	1080	AD 20 K
-	20	-	-	6	-	-	-	-	-	-	-	-	-	-	4	-	-	9	4	-	-	-	-	-	1090	AD 20 K
-	-	5	-	7	-	-	-	-	-	-	-	-	-	5	5	5	-	9	5	2	5	5	-	-	1090	AD 24 K
-	0	6	20	7	-	-	-	-	-	-	-	1	-	5	4	4	2	9	4	2	1	4	7	4	1090	AD 26 K
-	40	9	10	5	-	-	-	-	-	-	1	-	-	4	3	3	-	9	3	-	-	9	-	-	1090	AD 21 K
-	30	-	-	6	-	-	-	-	-	-	-	-	-	-	5	-	0	-	5	-	-	-	-	-	1100	AD 24 K
-	40	-	-	6	-	-	-	-	-	-	-	-	-	5	4	4	0	-	4	2	-	-	-	-	1100	AD 261 K
-	-	-	-	5	-	-	-	-	-	-	-	-	-	5	5	5	0	-	5	-	-	-	-	-	1100	AD 23 K
-	40	-	-	7	-	-	-	-	-	-	-	-	-	5	5	5	0	-	5	3	-	-	-	-	1100	AD 25 K
-	-	-	-	6	-	-	-	-	-	-	-	-	-	5	5	5	0	4	5	-	-	-	-	-	1100	AD 23 K
-	50	-	2	6	-	-	-	-	-	-	-	-	-	5	5	9	0	1	5	5	6	-	-	-	1100	AD 22 K
-	40	-	-	5	-	-	-	-	-	-	-	-	-	8	4	8	0	0	4	4	5	9	-	-	1100	AD 22 K
-	00	-	8	7	-	-	-	-	-	-	-	2	-	5	5	5	0	-	5	2	1	4	8	-	1100	AD 26 K
-	-	-	20	8	00	-	-	-	-	-	2	-	-	1	3	6	0	5	-	3	2	9	-	-	1100	AD 215 K
-	40	-	20	7	-	-	-	-	-	-	2	-	-	5	5	5	0	-	4	-	-	-	-	-	1100	AD 25 K
10	70	-	00	4	-	-	-	-	-	-	-	-	-	2	2	-	1	-	-	-	-	-	-	-	1110	AD 27 K