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**GLASS PRODUCTION TECHNOLOGY: DEPTH CLASSIFICATION.**

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Works out a scheme for the depth classification of subjects going with the Host Subject Glass Production Technology. Gives a list of 15 selected examples classified according to the scheme. Comments on the use of the schedule of Common Property Isolates in the design work.

*Abbreviations Used*

(A1) = Array of Order 1	[P] = Personality Facet
(A2) = Array of Order 2	[1P] = [P] of Round 1
(A3) = Array of Order 3	[2P] = [P] of Round 2
(AD) = Alphabetical Device	(Q1) = Quasi Isolate(s)
(ADPN) = Array Division by Packet Notation	T = Telescoping of
(BC) = Basic Class(es)	T1 = Telescoping 1 of
(BS) = Basic Subject(s)	T2 = Telescoping 2 of
(CPI) = Common Property Isolates	... ..
(FC) = Fundamental category(ies)	T5 = Telescoping 5 of
(IN) = Isolate Number(s)	

**0 INTRODUCTION**

In an earlier paper (1), a step-wise procedure to implement the new methodology (5) for the design and development of a scheme for depth classification of subjects going with the (BS) in Commodity Production Engineering, was described. In the present paper, the design of a scheme for the classification of subjects going with the Host Subject 'Glass Production Technology' is given. The schedule is provisional.

**1 DEFINITION****11 CHEMICAL PRODUCTION TECHNOLOGY**

The production of commodities involving chemical reactions and/or physico-chemical changes. It includes the production of commodities in which unit processes form the basis of the manufacturing operations such as it obtains in the case of petroleum refining, glass making, paper making, etc.

**12 GLASS**

Glass is an inorganic material that is produced by fusion and subsequent cooling, the fused mass becoming rigid without crystallising.

**2 BASIC CLASSES IN 'F CHEMICAL TECHNOLOGY'**

It has been found convenient to divide the Main Subject 'Chemical Technology' into a few Canonical Subjects, each of which may be deemed a (BS). One such (BS) is 'Commodity Production Technology'.

It has also been found convenient to deem the subject 'Glass Production Technology' to go with the (BS) 'Commodity Production Technology'. The isolate 'Glass' is derived on the basis of the characteristic 'By Commodity'. The isolates derived on the basis of the characteristic 'By Commodity' will be the

earliest of the isolates in [IP]—that is, occurring closest to the (BS) 'Commodity Production Technology'—in the facet structure. Thus, the subject 'Glass Production Technology' will be represented by the Host Subject:

Commodity Production Technology (BS), Glass [IP]

### 3 FIRST CHARACTERISTICS

#### 31 IN [IP]

A list of the First Characteristics that may be used as (QI), the isolates derived on the basis of which may be used for qualifying the 'Commodity Isolate' Glass occurring in [IP]—is given in Table 1 in Sec 311. These (QI) have been selected by blending the *a priori* and pragmatic approaches. The latter consisted in examining about 200 assorted micro documents and a few macro documents. Table 1 also indicates the second and later order (QI) by suitable indentation.

311 TABLE I QUASI ISOLATES IN [IP]

SN	Sector	Quasi Isolates
a	b	c
1-3	(S-(A))	By Brand
1		By Name of company
2		By Name of variety
3		By Code number
4	(S-(1))	By Make
5-13		By Purpose
5	(S-A)	By Chemical property-based purpose
6		By Electronic/electrical property-based purpose
7-9		By Optical property-based purpose
7		By Special radiation-property-based purpose
8		By Filtering and colouring-property-based purpose
9		By Illumination and visibility-based purpose
10		By Thermal property-based purpose
11		By Acoustical property-based purpose
12		By Structural-mechanical property-based purpose
13	(S-9A)	By Non-fabricated form
14-21		By Material of glass
14-19	(S-9a)	By Constituent
14		By Network former
15	(S-1)	By Stabiliser-modifier
16		By Flux
17-18		By Colouring agent
17		By Agent
18		By Form
19		By Minor constituent
20'		By Nucleating agent

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SN	Sector	Quasi Isolates
a	b	c
21	(S-z1)	By Raw material
22-83		By Property
22-30	(S-e)	By Chemical property
22-24	(S-f)	By Corrosion resistance
22		By Corroding agent
23		By Temperature
24		By Degree of attack
25-30		By Photochemical property
25-27		By Photosensitivity
25		By Kind of chance
26		By Radiation
27		By Time of fading
		By Photoconduction
28		By Secondary Electronic emission coefficient
29		By Quantum efficiency
30		By Photoluminescence
31		By Thermo-chemical property
32	(S-d)	By Engineering property
32		By Machinability
33-36	(S-cT)	By Electrical property
33-35		By Dielectric property
33		By Loss factor
34		By Dielectric constant
35		By Power factor
36		By Electrical conductivity
37-43	(S-cR)	By Optical property
37	(S-cS)	By Stress optical Coefficient
38-40		By Absorption/Transmission
38		By Colour
39		By Particulate radiation
40		By Electromagnetic radiation
41		By Dispersion
42		By Birefringence
43		By Refractive index
44-51	(S-cP)	By Thermal property
44	(S-cQ)	By Melting point
45		By Thermal expansion
46		By Specific heat
47		By Thermal shock resistance
48		By Upper use temperature
48		By Log volume resistivity
50		By Thermal stress resistance
51		By Thermal conductivity
52-76	(S-c)	By Physical property
52	to	By Abrasion resistance
53	(S-cH)	By Coefficient of friction
54-56		By Permeability

SN	Sector	Quasi Isolates
a	b	c
54		By Gas
55		By Temperature
56		By Quantity
57		By Hardness
58		By Flexibility
59-65		By Viscosity points
59		By Strain point
60		By Annealing point
61		By Softening point
62		By Working range
63		By Working range index
64		By Relative gob temperature
65		By Melting range
66		By Surface tension
67		By Fatigue
68		By Tensile strength
69		By Compression strength
70		By Strength value
71		By Strength to weight ratio
72		By Design strength
73		By Poisson's ratio
74		By Young's modulus
75		By Density
76		By Weight
77-80	(S-b)	By Mathematical property
77-80		By Dimension
77		By Surface area
78		By Diameter/Thickness
79		By Breadth
80		By Length/Height
81-83	(S-a)	By General property
81		By Homogeneity
82-83		By Normality
82		By Number of seeds and blisters
83		By Number of blisters
84	(S-09A) to (S-0A)	By Process stage

## 312 SEQUENCE OF THE (Q1)

The Group Strategy (2) was applied to derive a helpful sequence among the (Q1). Examples of the result of its application are given in Tables 2 and 3.

313 TABLE 2. (QI) OF ORDER 1

SN	Quasi isolate	Correlated with (FC)	SN in Table 1
1	By Brand	Personality	1-3
2	By Make	Personality	4
3	By Purpose	Personality	5-13
4	By Material	Material (Matter)	14-21
5	By Property	Material (Attribute)	22-83
6	By Stage of processing	Time	84

314 TABLE 3. (QI) OF ORDER 2 CORRELATED WITH THE (QI) OF ORDER 1 'BY PROPERTY'

SN	Quasi isolate	Correlated with	SN in Table 1
1	By Chemical property	Matter (Attribute)	22-30
2	By Machinability	" "	31
3	By Electrical property	" "	32-35
4	By Optical property	" "	36-42
5	By Thermal property	" "	43-50
6	By Physical property	" "	51-73
7	By Mathematical property	" "	74-77
8	By General property	" "	78-80

In column *c* of Table 1 in Sec 311 is given a list of the (QI) in the sequence derived by the use of the Group Strategy.

### 315 SEQUENCE OF ATTRIBUTE-ISOLATES

The isolates derived on the basis of the (QI) 'By Property' — correlated with the (FC) 'Matter (Attribute)', — have been arranged in a sequence parallel to that of the isolates in the schedule of (CPI) (4).

### 32 IN [2P]

A list of the First Characteristics that may be used as (QI) in [2P] is given in Table 4, Sec 321. These (QI) have also been selected by blending the *a priori* and pragmatic approaches. The second and later order (QI) are indicated by suitable indentation.

321 TABLE 4. QUASI ISOLATES IN [2P]

SN	Sector	Quasi isolates
a	b	c
1-27	(S-A)	By Process
1-18	(S-9A)	By Stage
1		By Raw material preparation
2		By Batch preparation
3-4		By Melt preparation
3		By Preparation
4		By Fining
5		By Form/Shape production
6		By Stress relief
7		By Finishing
7		By Cutting
8		By Drilling
9-10		By Grinding
9		By Finish
10		By Removal rate
11-13		By Polishing
11		By Method
12		By Flatness
13		By Surface finish
14		By Decoration
15-16		By Sealing
15		By Method
16		By Material sealed with
17-18		By Durability improvement
17		By Chemical toughening
18		By Tempering
19-57		By Operation
19		By Type of operation
20-27	(S-9a)	By Condition of operation
20		By Output
21		By Quantity used
22		By Tolerance
23		By Pressure
24		By Temperature
25		By Cooling rate
26		By Maximum-minimum temperature
27		By Time of operation
28-36	(S-1)	By Material used
28	(S-21)	By Raw material
29		By Fining agent
30		By Binding agent
31		By Coupling agent
32		By Polishing agent
33		By Chilling agent
34		By Pool material for drawing
35		By Decorating agent
36		By Form of material

SN	Sector	Quasi Isolates
a	b	c
35-57	(S-a)	By Equipment used
37-55		By Purpose
37		By Unloading
38		By Storing
39		By Transfer
40		By Mixing
41		By Feeding
42-55		By Melting (Furnace)
42		By Number
43		By Kind
44		By Refractory
45		By Regeneration
46		By Shape
47		By Draught
48		By Stirring
49		By Forming
50		By Shaping
51		By Cutting
52		By Drilling
53		By Grinding
54		By Polishing
55		By Annealing
56-57		By Operation
56		By Method
57		By Power

### 322 SEQUENCE OF THE (QI)

The Group Strategy was applied to derive a helpful sequence among the (QI). In column *c* of Table 4 in Sec 321 is given a list of the (QI) in the sequence derived by the use of the Group Strategy.

### 4 NOTATION

#### 41 'COMMODITY ISOLATES'

The provisional (IN) for the commodity isolates in [1P] and the resulting Host Class are as follows:

- F8 Commodity production technology
- F8,3 Food technology
- F8,44 Ceramic and glass technology
- F8,441 Ceramic technology
- F8,445 Glass technology
- F8,4Z Macromolecular substance
- F8,51 Rubber technology
- F8,52 Plastics technology



#### 42 ALLOCATION OF SECTORS TO (QI)

The provisional allocation of the sectors to the (QI) in [1P] is given in column *b* of Table 1 in Sec 311. In assigning the sectors, the factors to be taken into consideration have been mentioned earlier (3). As far as possible, the (IN) in the schedule of (CPI) have been used for the isolates derived on the basis of the (QI) 'By Property' in [1P]. In most cases, however, the last digit in Hindu-Arabic numerals in that schedule has been replaced by a Roman capital letter to facilitate the addition of units of measure to the (IN).

#### 5 ANNOTATION

##### 51 USE OF THE SCHEDULE OF (CPI)

Out of the 84 (QI) in [1P] over 60 were found to correlate with the (FC) Matter (Attribute) (See Sec 311 Table 1, Ser N 22-83). It was helpful to use the schedule of (CPI) already available (4), in the

- 1 Choice and naming the (QI) correlated with Matter (Attribute);
- 2 Arranging these (QI) in a helpful sequence; and
- 3 Allocating notation to them.

The Canon of Consistency and the Canons of Scheduled and Systematic Mnemonics have thus been conformed to, to a large extent. In the list of (QI) gaps were left 'automatically' providing for the future interpolation of new (QI). For example, the isolate 'Photoluminescence' was not included in the schedule as it did not occur in the first set of 200 micro documents examined. However, it did occur in one of the documents examined subsequently. Interpolation of the new (QI) in the filiatory sequence and assigning it a notation was easy.

##### 511 LENGTH OF NOTATION

In the schedule of (CPI), each (IN) generally contains more than two digits. Therefore, the use of those (IN) in the present schedule has resulted in (IN) with three or more digits in the case of the isolates derived on the basis of the 60 (QI) correlated with the (FC) Matter (Attribute). No attempt has been made to shorten the notation further. It will be more advantageous to do it after a fairly comprehensive schedule of (CPI) is prepared.

##### 52 SEQUENCE OF THE ISOLATES IN THE SCHEDULE FOR 'PURPOSE'.

The number of commodities made of glass is very large. Therefore, the grouping of the commodities in a helpful sequence presented difficulties initially. However, it was noted that the use of glass in the fabrication of a particular commodity is largely

dependent on the various physical and chemical properties of glass. This fact has been utilised in the arrangement of the isolates derived on the basis of the (QI) "By Purpose". Thus, we have (QI) of Order 2 such as

By Structural-mechanical-property-based-purpose

By Acoustical-property-based-purpose

By Thermal-property-based-purpose

By Optical-property-based-purpose

By Electronic-electrical-property-based-purpose.

By Chemical-property-based-purpose

Here again, the sequence of the (QI) parallels the sequence of the groups of isolates in the schedule or (CPI).

### 53 ECONOMY

Economy in schedule-building has been achieved by conforming to the Canons of Scheduled and Systematic Mnemonics, and by using (ADPN). Examples are the isolates be derived by the (QI) to "By State of processing" in [1P], "By Source" in [1P], "By Raw material in [2P], and the schedule for Matter (Material).

Only about 50 percent of the isolates have been enumerated. The other isolates can be got by one device or the other as indicated in the schedule.

### 6 INDEX TO THE SCHEDULE

*Note.*—Isolates and (QI) in [2P] are indicated by "[2P]" preceding the (IN).

Abrasion resistance (QI), cH	Amine f6Zp
Abrasive GV	Ammonium salt [2P], zRB
Absorption cR7	Annealing [2P], B1
Accurate bore tube flowmeter C7	equipment (QI), [2P] c
Acid	Antimony oxide [2P], zR15
corroding agent f6M	Network former 88
etching [2P], 9G1	Arsenic
metal salt f6S3	oxide 87
polishing agent [2P], zG3	trisulphide 9v
polishing stage [2P], 9P3	Automatic
Acoust property-based-purpose M1	gob-fed [2P], r6
Air	method [2P], bB
blast [2P], zB8	Back stop GF
blowing [2P], C8	Band saw [2P] j2
Alkali resistant glass f6P	Banding [2P], 9G33
Alumina hydrate 23	Barium
Aluminum oxide	carbonate 83
modifier 75	oxide 74
network former 84	Barrel [2P], zb1
Alumina-silicate glass 9f	Base resistant glass f6p
AM radio wave cR7T	Basic
	refractory [2P], rHB
	salt f6S5
	Batch
	operation [2P], 91

- type kiln [2P], e1  
 Bead J1  
 Belt conveyer zd2  
 Beta  
   glass 9W1  
   particle transmission cR7WJ  
 Binding agent (QI), [2P], zM  
 Birefringence (QI), cR3C  
 Bisheroux process [2P], E4  
 Black  
   colour cR91  
   light  
     bulb R27  
     filter R48  
     tube R25  
 Blanket batch feeder [2P], W5  
 Blister, Numb of (QI), zZE  
 Block mold [2P], pB  
 Blow pipe [2P], m1  
 Blowing [2P], CM  
   method [2P], 9EB  
 Blue  
   colour cR86  
   print machine D1  
 Bonded-diamond drill [2P], 48  
 Borate glass 9q  
 Borax 31  
 Boric  
   acid 33  
   oxide 76  
 Borosilicate glass 9e  
 Boron  
   grinding equipment [2P], f52  
 Boron  
   oxide 82  
   trioxide 63  
 Bottle Y15  
 Brand (QI), (A)  
 Breadth (QI), b6E  
 Bridgwall [2P], t1  
 Bright colour 05  
 Brown cR92  
 Brush [2P], 9G31  
 Bubbler [2P], G3  
 Bucket elevator [2P], zd1  
 Building block GH  
 Bullet proof window G73  
  
 Calcination vessel MQ  
 Calcined magnesite 73  
 Calcium  
   alumina 21  
   aluminat 9s  
   germanate 9t  
   oxide 71  
 Canary colour cR845  
 Cane 9L  
  
 Capacitor WX  
 Carbide [2P], f5  
   drill [2P], h5  
   wheel [2P], j5  
 Carbon stick [2P], m5  
 Casing GJ  
 Casting [2P], CH  
 Cellulose [2P], d3  
 Centrifugal  
   casting [2P], CJ5  
   pump YB  
 Cerium oxide as  
   fixing agent [2P], zR12  
   polishing agent [2P], zG5  
 Ceramics sealing [2P], 9E3  
 Charcoal and linseed oil  
   mixture [2P], p14  
 Charging [2P], M2  
 Chemical  
   property (QI) e  
   based purpose (QI) Y  
   toughening [2P], 9C  
 Chilling [2P], 9B4  
   agent (QI), (I2P), zB  
 Chlorate [2P], zR6  
 Chocolate colour cR95  
 Circular  
   blade saw [2P], j25  
   furnace [2P], vD5  
 Clay pot [2P], rK1  
 Clear glass cR81  
 Clock face TN6  
 Coated mould [2P], p1  
 Code number (QI), (A=1)  
 Coefficient of  
   friction (QI), cG  
   thermal expansion (QI), cQL  
 Colloid [2P], z26  
   colouring agent 45  
 Colour (QI), cR8  
   filter R6  
 Colouring agent (QI), 4  
 Combination of  
   transfer equipment [2P], zd8  
 Compression strength (QI), c2Q  
 Concrete furnace [2P], zf13  
 Condenser W8  
 Conditioning [2P], G1  
 Conductive rowing WV  
 Conductivity, Electrical (QI), cT4A  
 Constituent (QI), 1  
 Container Y1  
 Continuous  
   fibre glass 9W7  
   furnace [2P], vK5  
   lehr [2P], c3  
   operation [2P], 93

- Conveyor-belt type lehr [2P], c34  
 Cooking ware  
   Chemical property-based M1  
   Thermal property-based Y3  
 Cooling rate (Q1) [2P], 9h  
 Copper wheel engraving [2P], 9G2  
 Corning ribbon machine [2P], mC  
 Corroded glass f6B  
 Corroding agent (Q1), fK6  
 Corrosion resistance f61  
 Corundum [2P] f3  
 Country of make (Q1), 1  
 Coupling agent (Q1), [2P], zJ  
 Cover GM  
   glass R63  
 Covered furnace [2P], vK12  
 Cream colour cR843  
 Cullet 9V  
 Cutting equipment (Q1), [2P], j  
   Cylinder of  
     blue-print machine D15  
  
 Danner machine [2P], mD  
 Dark colour 07  
 Day tank [2P], vK3  
 Decorating agent (Q1), [2P], zD  
 Deep colour 07  
 Degree of corrosion (Q1), f61  
 Density (Q1), c1D  
 Depth of colour 01  
 Design strength (Q1), c2M  
 Dewar flask MT1  
 Diameter (Q1), b6B  
 Diamond [2P], f8  
 Dielectric  
   constant (Q1), cT4D  
   property (Q1) cT4B  
 Diffusion  
   light control PB2  
   vacuum pump E1  
 Dimension (Q1), b  
 Direct-fired furnace [2P], vFS  
 Discontinuous  
   fibre 9W4  
   operation [2P], 96  
 Dispersion (Q1), cR4  
 Dolomite z71  
 Door panel G8  
 Double glazed door MX1  
 Downward draught  
   furnace [2P], vB7  
   drag shovel [2P], zh4  
 Draught of furnace (Q1), [2P], vB  
 Drawing [2P], CB  
 Drilling [2P], 9V  
   equipment (Q1), [2P], h  
  
 Dry  
   ammonia f6Ze  
   gauging [2P], C4  
   Dull colour 04  
  
 Electrical  
   conductivity cT4A  
   power [2P], b5  
   property (Q1), cT  
 Electromagnetic radiation  
   (Q1), cR7  
 Electron absorption cR7WA  
 Electronic beam [2P], 9V5  
 Electrostatic print [2P], 9G37  
 Engineering property (Q1), d  
 Equipment (Q1) [2P], a  
 Explosion globe PD  
 Extreme temperature cPR  
 Eyeglass QL1  
  
 Fabric felt [2P], fH  
 Fa infrared adsorption cR7M  
 Fast colour 06  
 Fat, Corrosion by f6Zv  
 Fatigue (Q1), c2X  
 Feeding equipment (Q1), [2P], w  
 Feldspar z12  
 Felt d6  
 Ferric oxide [2P], zG7  
 Fibre  
   glass 9W  
   optics T7  
 File [2P], j3  
 Filter EF  
   sheet [2P], J  
 Filtering and colouring (Q1), R  
 Fining [2P], J  
   agent [2P], zR  
 Finish [2P], 9T  
 Finishing [2P], 9D  
 Fire  
   clay furnace [2P], v-5  
   polish [2P], 9p4  
   screen GB1  
 Flame  
   blowing [2P], C6  
   cut off [2P], 9X1  
   proof (Q1), e41F  
 Flatness (Q1), [2P], 9M  
   *irr* Machinability d8G  
 Flexibility (Q1), cG  
 Flexible automobile window G1  
 Flexographic printing mould D2  
 Float GT  
 Floater [2P], t3  
 Floating process [2P], CG

- Fluid amplifier J3  
 Fluorine 6  
 Fluxspar 66  
 Flux 6  
 FM radio wave absorption cR7R  
 Foam glass 9Y  
 Foaming [2P], D5  
 Font [2P], pE  
 Ford process [2P], E5  
 Form (Q1), [2P], z2  
*ir/* Colouring agent (Q1), 4  
 Forming equipment (Q1), [2P], r  
 Fourcalt process [2P], E1  
 Fractionating column VG  
 Frost-free  
   window M6  
   windshield MD  
 Furnace [2P], v  
   core ML1  
   lining ML2  
   window ML7  
 Fuse plug body WB  
 Fused  
   salt [2P], zB5  
   silica glass 9h  
 Fusion cast refractory [2P], vH1  
 Gamma-ammopröpyl-  
 trimethoxysilane [2P], zJ3  
 Gamma ray absorption cR7C  
 Garnet [2P] f2  
 Gas  
   hearth process [2P], 9B8  
   meter valve EH8  
   permeation cF6G  
   turbine M35  
 Gauge glass YM  
 General property (Q1), a  
 Germanium oxide 83  
 Germicidal lamp R21  
 Glare removing glass Pc5  
 Glass  
   as raw material zF  
   beads TM  
   ceramic 9x  
   electrode WT  
   for diffusion light control PB3  
   friction on  
     fatty acid cGH  
     glass cGB  
     oil cGF  
     sand 11  
     sealing [2P], 9E4  
     Type of (Q1), 9a  
   Glazing [2P], 9G3  
   Glycidoxyl propyltri-  
   methoxysilane [2P], zJ1  
   Godet wheel EC  
   Goggle QL4  
   Grade of homogeneity (Q1), a7A  
   Green cR85  
   Grey cR93  
   Grinding [2P], 9R  
   equipment [2P], f  
   wheel [2P], fF  
   Halide [2P], zR4  
   Halogen resistant f6R  
   Hardness (Q1), cF1  
   Hartford IS [2P], r63  
   Heat  
     absorption sheet MS  
     insulation MX  
     lamp bulb R47  
     transmission R4  
   Heating  
     for tempering [2P], 9B4  
     method [2P], 9EF zro  
   Height (Q1), b6C  
   Helium permeation cF6G1  
   High  
     alumina [2P], vH7  
     photoluminescence e52F  
     temperature filter MG  
   Hole diameter tolerance d8D  
   Hollow tile refractory zF111  
   Homogeneity (Q1), a7  
   Honey comb  
     burner M4  
     heat exchanger M3  
   Hot iron [2P], pJ  
   Hydrocarbon corrosion f6Zm  
   Hydrogen  
     fluoride corrosion f6M1  
     permeation cF6G3  
 Illuminaion P  
 Image orthicon tube WP  
 Incandescent lamp P5  
   cover lens P56  
   envelope P56  
 Indigo colour cR861  
 Individual section mould [2P], pM  
 Induction-furnace crucible MP  
 Infrared  
   absorption cR7J  
   dome TG  
 Inorganic  
   halide corrosion f6Zb  
   salt [2P], zE1  
 Instrument house C1  
 Insulating refractory [2P], vHD  
 Insulation  
   Electrical W2

- Thermal M6  
 Ion exchange [2P], 9C2  
 IR dome TG  
 Irreversible photosensitivity o54Y  
 Ivanhoe machine [2P], ml  
 Jar  
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## 7 SCHEDULE

Isolates in [1P]

	By Stage of processing	a709	(zero) between the two sets of digits
	Note.—The (IN) enumerated in [2P] are to be used. Use (ADPN) wherever necessary. The (IN) so constructed is to be preceded by a "0" (zero) for use in [1P]. The name of the process etc may be suitably modified for use as Feature Heading and Subject Heading. (Illustrative)	=5A12	2 Multiply the given figure for the tolerance by 100, add the result to the (IN) derived according to Note 1 interpolating "A" between the two sets of digits. Read the result as an integer. (Illustrative)
		a7A	Homogeneity value 9.5 ± 0.12
		a7B	Grade
		a7C	A
		b	B
		b6B	C
			By Mathematical property
			By Dimension (cm)
			By Diameter/Thickness
			Note 1.—Multiply the given figure by 100, add the result to b1B and read it as an integer. (Illustrative)
09B	Tempered		
09C2	Strengthened by ion exchange		
09E1	Sealed with metal	b6B8	0.08 cm
09J0	Polished with acid, to 0.00023 cm/25 cm flatness and 65A finish.	b6B80	0.8 cm
(R23—M—23—L65)		b6C	By Length/Height
			Note.—Add the given figure and read it as given in the document. (Illustrative)
a	By General property		
a2	By Normality	b6C70=6	70.6 cm
a2E	By Number of blisters per 30 g	b6C95=3	95.3 cm
	Note.—Add the given figure and read it as an integer. (Illustrative)	b6E	By Breadth
a2E3	3 blisters		Note.—Add the given figure and read it as given in the document. (Illustrative)
a2E5	5 blisters	b6E65=3	65.3 cm
		b6E80	80 cm
a2G	By Number of seeds and blisters per 30 g.		
	Note.—Add the given figure and read it as an integer. (Illustrative)	6G	By Surface area
a2G30	30 seeds and blisters		Note.—Add the given figure and read it as given in the document. (Illustrative)
a2G35	35 seeds and blisters	b6G475	475 sq cm
		b6G810	810 sq cm
	By Homogeneity		
a7	Value	b6H	In sq meters
	Note.—1 Add the given figure interpolating a "0"		Note.—Add the given figure and read it as

	<i>given in the document.</i>	c2N4	10 <sup>4</sup>
	<i>(Illustrative)</i>	c2N6=5	10 <sup>4.5</sup>
b6H1=3	1.3 sq m		
b6H4=6	4.6 sq m	c2P	<i>By Strength value</i> (Kg/sq cm)
c	<i>By Physical property</i>		<i>Note.—Divide the given figure by 1000, add the result to c2P and read it as an integer.</i>
c1B	<i>By Weight (g)</i>		<i>(Illustrative)</i>
	<i>Note.—Correct the given figure to the tenth place, divide it by 10, add the result to c1B and read it as an integer.</i>	c2P28	28,000 Kg/sq cm
		c2P1750	1750,000 Kg/sq cm
c1B12	120 g		
c1B250	2500 g	c2Q	<i>By Compression strength</i> (Kg/sq cm)
			<i>Note.—Divide the given figure by 1000, add the result to c2Q and read it as an integer.</i>
c1D	<i>By Density (g/cm<sup>3</sup>)</i>		<i>(Illustrative)</i>
	<i>Note.—Add the given figure and read it as given in the document.</i>	c2Q63	63,000 Kg/sq cm
	<i>(Illustrative)</i>	c2Q126	126,000 Kg/sq cm
c1D2=57	2.57 g/cm <sup>3</sup>		
c1D6=1	6.1 g/cm <sup>3</sup>		
			<i>By Tensile strength</i> (Kg/sq cm)
c2B	<i>By Young's modulus</i> (Kg/sq cm × 10 <sup>8</sup> )	c2R	100 to 999 Kg/sq cm
	<i>Note.—Add the given figure and read as given in the document.</i>		<i>Note.—Divide the given figure by 10, add the result to c2R, and read it as an integer.</i>
	<i>(Illustrative)</i>		<i>(Illustrative)</i>
c2B1=1	1.1 × 10 <sup>8</sup>	c2R28	280 Kg/sq cm
c2B5	5.0 × 10 <sup>8</sup>	c2R95	950 Kg/sq cm
c2F	<i>By Poisson's ratio</i>		
	<i>Note.—Add the digits following the decimal point in the given figure.</i>	c2S	1,000 to 9,999 Kg/sq cm
	<i>(Illustrative)</i>		<i>Note.—Divide the given figure by 100, add the result to c2S and read it as an integer.</i>
c2F16	0.16		<i>(Illustrative)</i>
c2F271	0.271	c2S28	2800 Kg/sq cm
		c2S95	9500 Kg/sq cm
c2M	<i>By Design strength (Kg cm)</i>		
	<i>Note.—Divide the given figure by 10, add the result to c2M, and read it as an integer.</i>	c2T	10,000 to 99,999 Kg/sq cm
	<i>(Illustrative)</i>		<i>Note.—Divide the given figure by 1,000 add the result to c2T and read it as an integer.</i>
c2M12	12 Kg/sq cm		<i>(Illustrative)</i>
c2M140	140 Kg/sq cm	c2T28	28,000 Kg/sq cm
		cT295	95,000 Kg/sq cm
c2N	<i>By Strength to weight ratio</i> (1 × 10 <sup>8</sup> )		
	<i>Note.—Add the given value for n and read it as an integer.</i>	c2U	Over 100,000
	<i>(Illustrative)</i>		<i>Note.—Divide the given figure by 10,000 add the result to c2U and read it as an integer.</i>

	(Illustrative)		(Illustrative)
c2U28	280,000 Kg/sq cm	cC15	15°
c2U95	950,000 Kg/sq cm	cC30	30°
c2X	By Fatigue (Rockwell, Kg, cm)	cF1	By Hardness
	Note.— Multiply the given figure for the impression by 1000 and add the result. To this add the given figure for the load in Kg with "A" interpolated between the two sets of figures.	cF1K	In Knoop number
	(Illustrative)	cF1M	In Moh
			Note.— Add the given figure to the appropriate (IN) and read it as an integer.
		cF1K550	(Illustrative)
		cF1M5	550 Knoop number
			5 Moh
		cF6D	By Permeability
c2X2=4A50	0-0024 for 50 Kg load		T (A5) into (A4) begins
c2X1A30	0-001 for 30 Kg load	cF6E	By Quantity (1/10 <sup>2</sup> cc)
			Note.— Add the value of n and read it as an integer.
c3B	By Surface tension (dynes/cm)		(Illustrative)
	Note.— Add the given figure and read it as an integer.	cF6E7=8	1/10 <sup>7.8</sup> cc
	(Illustrative)	cF6E9	1/10 <sup>8</sup> cc
c3B285	285 dynes	cF6F	By Temperature (°C)
c3B310	310 dynes		Note.— Divide the given figure by 10, add the result to cF6F and read it as an integer.
			(Illustrative)
c7	By Viscosity points		
c7B	By Melting range (Viscosity about 100P)	cF6F40	400° C
c7C	By Relative gob temperature (10 <sup>3</sup> P)	cF6F51	510° C
c7E	By Working range index	cF6G	By Gas
		cF6G1	Helium
c7F	By Working range (10 <sup>3</sup> - 10 <sup>8</sup> P)	cF6G2	Neon
		cF6G3	Hydrogen
		cF6G5	Oxygen
			T (A5) into (A4) ends
c7G	By Softening point (10 <sup>7.4</sup> P)		
c7H	By Annealing point (10 <sup>3.5</sup> P)	cG	By Coefficient of friction
c7J	By Strain point (10 <sup>4.5</sup> P)	cGB	Glass on glass
	Note.— Add the given figure to the appropriate (IN) and read it as an integer.		Note.— Add the digits following the decimal point.
	(Illustrative)		(Illustrative)
c7C980	980° C relative gob temperature	cGB16	0-16
		cGN23	0-23
c7E176	176 Working range index	cGF	Glass on oil
c7G714	714° C Softening point	cGH	Glass on fatty acid
c7J497	497° C Strain point		Note.— Multiply the given figure by 1000 add the result to cGF or cGH as the case may be, and read it as an integer.
			(Illustrative)
cC	By Flexibility	cGF3	0-003 for glass oil
	Note.— Add the given figure and read it as an integer.		

cGH15	0.015 for glass on fatty acid		<i>It as an integer.</i>
			(Illustrative)
cH	By Abrasion resistance (Glass loss per unit of time on standblasting under standard conditions) Note.— Add the given figure and read it as in the document. (Illustrative)	cPQ12 cPQ55	120° C normal 550° C extreme T (A5) into (A4) ends
cH0=6 cH3=5	0.6 3.5	cPR	By Thermal shock resistance (for annealed plate 15 × 15 cm)  T 3 (A5) into (A4) begins For 0.32 cm thickness For 0.64 cm thickness For 1.28 cm thickness
cP	By Thermal property	cPS cPT cPU	Note.— Add the given figure to the appropriate (IN) and read it as an integer. (Illustrative)
cPB	By Thermal conductivity (Cal per cm per °C per sec) Note.— Multiply the given figure by 1000 add the result to cPB and read it as an integer. (Illustrative)	cPS350 cPT250	350 for 0.32 cm thick plate 250 for 0.64 cm thick plate
cPB7=8 cPB28	0.0078 cal per cm per °C 0.028 cal per cm per °C	cPU225	225 for 0.28 cm thick plate T 3(A5) into (A4) ends
cPG	By Thermal stress resistance Note.— Add the given figure and read it as an integer. (Illustrative)	cQD	By Specific heat Cal/cg (°C)  T 1(A4) into (A3) begins At 25° C At 500° C At 1000° C
cPG25 cPG55	25 55	cQE cQG cQJ	Note.— Multiply the given figure by 1000, add the result to the appropriate (IN) and read as given in the document. (Illustrative)
	By Log <sub>10</sub> volume resistivity (52 cm) At 25° C At 250° C At 350° C	cQG75 cQJ230	0.075 at 500° C 0.230 at 1000° C T 1(A4) into (A3) ends
cPH cPK cPM	Note.— Add the given figure to the appropriate (IN) and read it as given in the document. (Illustrative)	cQL	By Thermal expansion (°C × 10 <sup>-5</sup> )  T 2 (A4) into (A3) begins From room temperature to setting point
cPH6=4 cPK11.3 cPM5	6.4 at 25° C 11.3 at 250° C 5.0 at 350° C	cQM cQP	From 0 to 300° C Note.— Add the given figure to the appropriate (IN) and read it as a integer. (Illustrative)
cPN	By Upper use temperature (°C)  T (A5) into (A4) begins Normal Extreme Note.— Divide the given figure by 10, add the result to cPQ or cPR as the case may be, and read	cQM12 cQP25=6	12 from room temperature to setting point 25.6 from 0 to 300° C

		cR7S	Shortwave radio wave
cQR	Ultra low expansion	cR7T	AM radio wave
cQS	Zero expansion	cR7U	Long wave radio wave
cQV	<i>By Melting point (°C)</i>		<i>By Particulate radiation</i>
	<i>Note.— Divide the given figure by 10, add the result and read it as an integer.</i>	cR7W	Particle
	<i>(Illustrative)</i>	cR7WH	Electron
cQV95	950° C	cR7WJ	Beta particle
cQV167	1670° C	cR7WM	Positron
		cR7WN	MU meson
cR	<i>By Optical property</i>	CR7WP	Pi meson
cR3B	<i>By Refractive index (at Sodium D line)</i>	cR7WR	Nucleon
	<i>Note.— Add the given figure.</i>	cR7WS	Proton
	<i>(Illustrative)</i>	cR7WT	Neutron
cR3B1=458	1.458		<i>Note.— Add the given figure for the percentage of transmission and read it as an integer.</i>
cR3B1=973	1.973	cR7H64	64% of light
		cR7K52	52% of infra-red
cR3C	<i>By Birefringence</i>		
	Birefringent	cR8	<i>By Colour</i>
	<i>Note.— Add the given figure for birefringence in <math>m\mu/cm</math> and read it as an integer.</i>	cR81	Clear
	<i>(Illustrative)</i>	cR82	White
cR3C55	55 $m\mu/cm$	cR83	Red
cR3C95	95 $m\mu/cm$	cR831	Vermillion
cR3G	Non-birefringent	cR832	Pink
		cR833	Maroon
cR4	<i>By Dispersion</i>	cR835	Purple
	(Fraunhofer lines C-F)	cR836	Rose
cR4B	0.001 to 0.01	cR84	Orange
	<i>Note.— Multiply the given figure by 100 and add the result to cR.</i>	cR841	Yellow
	<i>(Illustrative)</i>	cR843	Cream
cR4B5	0.005	cR845	Canary
cR4B6=2	0.0062	cR847	Scarlet
cR4B15	0.015	cR85	Green
		cR86	Blue
	<i>By Absorption Transmission (%)</i>	cR861	Indigo
cR7	<i>By Electromagnetic radiation</i>	cR87	Violet
cR7C	Gamma ray	cR91	Black
cR7D	X-ray	cR92	Brown
cR7E	Soft X-ray	cR93	Grey
cR7G	Ultraviolet ray	cR95	Chocolate
cR7H	Visible spectrum	cR98	Multiple
cR7J	Infra-red		<i>Note.— To construct the (IN) for a depth of colour add the appropriate pair of digits from the following schedule for Depth of Colour to the (IN) for the colour.</i>
cR7K	Near infra-red		
cR7L	Middle infra-red		
cR7M	Far infra-red		<i>Depth of colour</i>
cR7N	Microwave	01	Light
cR7P	Radar wave	02	Medium
cR7R	Television, FM radio wave	04	Dull



	<i>figure for the voltage divided by 10. Interpolate "A" between the two sets of digits. Read the result as an integer.</i>	f61	Resistant (neutral glass)
		f62	Negligible
		f6B	Corroded
			<i>Note.— Multiply the given figure (in mg/cm<sup>2</sup>/hr) by 10<sup>8</sup>, add the result to f68 and read it as an integer.</i>
e51B2A30	Coefficient of 2 at 300 V		<i>(Illustrative)</i>
e51B3=5A25	Coefficient of 3·5 at 250 V	f6B1	0·001 mg/cm <sup>2</sup> /hr
		f6B10	0·01 mg/cm <sup>2</sup> /hr
	<i>By Quantum efficiency</i>	f6C	Swelling
	<i>(n × 10<sup>-4</sup>)</i>	f6D	Absorption
	Electromagnetic radiation	f6E	Blooming
	<i>Note.— Divide e51 as for cR7.</i>	f6H	<i>By Temperature (°C)</i>
	<i>(Illustrative)</i>		<i>Note.— Add the given figure and read it as an integer.</i>
e51G	Ultraviolet		<i>(Illustrative)</i>
e51J	Infra-red	f6H150	150° C
	<i>Note.— Add the given figure for n to the (IN) for the appropriate radiation and read it as an integer.</i>	f6H225	225° C
	<i>(Illustrative)</i>		<i>By Corroding agent</i>
e51G3	3 × 10 <sup>-4</sup> for ultraviolet	f6K	Weathering
		f6K1	Rating 1
		f6K2	Rating 2
		f6K3	Rating 3
e52	<i>By Photoluminescence build up</i>	f6L	Water
e52B	Low	f6L1	Sea water (5% Salt)
e52B	Medium	f6M	Acid
e52F	High	f6M1	HF
		f6M2	21% Phosphoric acid
e54	<i>By Photosensitivity</i>	f6M8	85% Phosphoric acid
c54A	<i>By Time of fading (sec)</i>	f6M9	Other acids
	<i>Note.— Add the given figure and read it as an integer.</i>		<i>Note.— To be derived by (AD).</i>
	<i>(Illustrative)</i>	f6P	Base
e54A65	65 sec	f6P1	Weak
e54A250	250 sec	f6P13	3% Ammonium hydroxide
		f6p2	Strong
		f6P2K	6·9% Potassium hydroxide
	<i>By Radiation</i>	f6P2N	5% Sodium hydroxide
	<i>Note.— Divide e54 as for cR7.</i>	f6R	Halogen
	<i>(Illustrative)</i>	f6S	Metal salt
e54G	Ultraviolet	f6S3	Acid
e54H	Light	f6S4	Neutral
		f6S5	Basic
		f6S51	0·5 N Sodium carbonate
	<i>By Kind of change</i>	f6Zb	Inorganic nonmetallic halide
e54X	Photochromism (Phototropism)	f6Zz	Sulphur dioxide
e54Y	Permanent (Irreversible) change	f6Ze	Dry Ammonia
		f6Zg	Oxidising chemical
		f6Zh	Reducing chemical
	<i>By Corrosion resistance</i>	f6Zm	Hydrocarbon
	<i>By Degree of attack</i>	f6Zp	Amine



## GLASS TECHNOLOGY

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f6Zr	Polyhydroxyl	aliphatic	SS	Sulphur
f6Zt	Mercaptan		5TT	Titanium
f6Zv	Oil and fat			
	<i>By Starting raw material</i>		6	<i>By Flux</i>
	<i>Note.—The (IN) enumerated in the schedule for 'source' at the end of the schedule for the constituents may be used prefixing 'z' to the (IN).</i>		61	Sodium oxide
	<i>(Illustrative)</i>		62	Potassium oxide
			63	Boron trioxide
			64	Nitre
			66	Fluorine (Fluorspar)
			7	<i>By Stabiliser and modifier oxide</i>
z12	Feldspar		71	Calcium oxide
z61	Soda ash		72	Magnesium oxide
z71	Dolomite lime stone		73	Zinc oxide
	<i>In addition the following may be used</i>		74	Barium oxide
			75	Aluminum oxide
zF	Glass		76	Boric oxide
	<i>Note.—Use (ADPN) for further division.</i>		77	Lead oxide
	<i>(Illustrative)</i>		78	Titania
			79A	Other oxides
zF0(9T)	Glass powder			<i>Note.—To be derived by (AD) using international nomenclature.</i>
zF0(9V)	Cullet			<i>(Illustrative)</i>
	<i>By Constituent</i>		79LI	Lithium oxide
1	<i>By Nucleating agent</i>		79SN	Tin oxide
	<i>Note.—To be derived by (AD) using international nomenclature.</i>		8	<i>By Network former oxide</i>
	<i>(Illustrative)</i>		81	Silicon
1TIO2	Titanium oxide		82	Boron
			83	Germanium
2	<i>By Minor constituent</i>		84	Aluminum
21	Oxide		85	Phosphorus
24	Fluoride		86	Vanadium
25	Sulphide		87	Arsenic
26	Phosphate		88	Antimony
	<i>Note.—The specific constituent may be derived by (AD) using the international nomenclature for the element involved.</i>		89I	Zirconium
	<i>(Illustrative)</i>		89A	Other oxides
21AS	Arsenic pentoxide			<i>Note.—To be derived by (AD) using international nomenclature.</i>
24BA	Barium fluoride		89BE	<i>(Illustrative)</i>
			89TA	Berellium oxide
	<i>By Colouring agent</i>		8A	Tantalum oxide
	<i>By Form</i>			Phosphate
4	Solution			<i>Note.—To be derived by (AD) using international nomenclature</i>
45	Colloid			<i>(Illustrative)</i>
46	Suspension		8LI	Lithium Phosphate
5	<i>By Agent</i>			<i>Note.—An isolate representing the source of a constituent may be added to the appropriate (IN) in the schedule for consti-</i>
	<i>Note.—To be derived by (AD).</i>			
	<i>(Illustrative)</i>			
5CD	Cadmium			

## NEELAMBEGHAN

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	<i>tuent. For illustrative examples see at the end of this schedule for 'Source'.</i>	9a	<i>By Glass type</i>
	Glass sand (Quartz)	9b	<i>T (A2) into (A1) begins</i> Silicate glass
11	Feldspar		<i>T1 (A3) into (A1) begins</i>
12	Petalite	9c	Soda-lime glass
13	Nepheline	9d	Lead glass
16	Syenite	9e	Boro-silicate glass
18	PbSiO <sub>4</sub>	9f	Alumino silicate glass
21	Calcium alumina	9g	96% silica glass
23	Alumina hydrate	9h	Fused silica glass <i>T1 (A3) into (A1) ends</i>
31	Borax		
33	Boric acid	9k	Lindeman glass
		9m	Non-silicate glass
41	Lepidolite		<i>T2 (A3) into (A1) begins</i>
43	Spodumene	9n	Phosphate glass
45	Lithium carbonate	9p	Borate glass
		9r	Rare earth borate glass
51	Pearl ash	9s	Calcium aluminate
53	Potassium carbonate	9t	Calcium germanate
61	Soda ash	9v	Arsenic trisulphide <i>T2 (A3) into (A1) ends</i>
71	Dolomite limestone		
73	Calcined magnesite		
75	High-Ca limestone	9x	Glass-ceramic <i>T (A2) into (A1) ends</i> <i>Note.— The above isolates may be used if the individual constituents are not specified.</i>
81	Litharge		
83	Barium carbonate		
85	Zinc oxide ( <i>Illustrative</i> )		
6331	Boron oxide from borax	9A	<i>By Purpose</i>
7512	Aluminium oxide from feldspar		<i>T (A2) into (A1) begins</i>
8116	Silicon dioxide from syenite <i>Note.— The (IN) for the percentage of a constituent in glass may be constructed by adding the given figure for the % to the appropriate (IN) for the constituent interpolating "0" (zero) between the two sets of digits.</i> ( <i>Illustrative</i> )	9B	<i>By Non-fabricated form</i> Plate
		9B8	Laminated
		9F	Sheet
		9F1	Reinforced
		9J	Strip
		9J2	Ribbon
		9L	Rod (cane)
		9N	Tubing
		9T	Powder
		9T8	Sintered compact
61012=5	Sodium oxide, 12.5%	9U	Marble
6161012=5	Sodium oxide from Soda ash, 12.5%	9V	Cullet
		9W	Fibre glass
7LI02	Lithium oxide, 2%	9W1	Beta glass
7LI4302	Lithium oxide from Spodumene, 2%	9W3	Torsion
		9W4	Discontinuous
81071=8	Silicon dioxide, 71%	9W7	Continuous
8116072	Silicon dioxide from Syenite, 72%	9X	Porous
		9Y	Foam Glass

	<i>By Fabricated form</i>	L	<i>By Acoustical property-based purpose</i>
	<i>By Structural-Mechanical property-based-purpose</i>	L1	Wools and mat
C1	Instrument house for deep submergence vehicle		<i>By Thermal-property-based purpose</i>
C2	Jewel bearing	M1	Cooking ware
C3	Optically flat surface plates (machinist's flats)	M3	Honeycomb heat exchanger
C5	Paraboloidal reflector shell for	M35	Gas turbine
C51	Sealed beam headlight	M4	Honeycomb burner
C55	Projector lamp	M6	Insulation
C7	Accurate bore tube flow-meter	MB	Improved solar-shielding window
D1	Blue-print machine	MD	Frost-free windshield
D15	Cylinder	ME	Frost-free window
D18	Sheet	MG	High temperature filter
D2	Mould for flexographic printing	MH	Solder seal
D22	Rubber	MK7	Oven window
D25	Plastics	ML1	Furnace core
E1	Diffusion vacuum pump	ML2	Furnace lining
E2	Oil cap	ML7	Furnace window
E3	Lubricator cap	MN	Pipe line for heat-exchange
EB	Roller for yarn	MP	Induction-furnace crucible
EC	Pulley or Godet wheel for yarn	MQ	Calcination Jar
EF	Filter	MQ3	Tray
EH	Slide-valve disc	MR	Thermocouple protection tube
EH5	Rotary valve seat	MS	Heat-absorption sheet
EH8	Gas meter valve	MT1	Dewar flask
EK	Textile	MT7	Vacuum bottle
EP	Level vial	MV	Thermometer tubing
G1	Flexible automobile window	MX	Heat insulation
G18	Windshield	MX1	Double glazed window
G7	Safety window		<i>By Optical-property based-purpose</i>
G73	Bullet-proof window	P	<i>By Illumination and visibility</i>
G76	Machine window	P1	Window (Ordinary)
G8	Door panel	P3	Skylight
GB	Safety screen	P4	Tile
GB1	Fire screen	P5	Incandescent lamp
GF	Back stop	P55	Envelope
GH	Building block	P56	Cover lens
GJ	Casing	PB2	Glass-ware with
GM	Cover	PB3	Diffusion light control
GP	Spacer	PC5	Lense-action prismatic light control
GR	Mirror disc for reflecting telescope	PD	Glare removing glass louvre
GT	Float	Q	Explosion globe
GV	Abrasive	Q1	
J1	Bead	Q3	<i>By Optical</i>
J15	Oil well propping	QC	Lens
J3	Fluid amplifier		Prism
J6	Multi lead		Mirror
J65	Videograph		
J7	Telescope mirror		

## L7

## NEELAMEGHAN

		WM	Sealing glass
QL1	Eyeglass	WN	Radiant heating panel
QL4	Goggle	WP	Image orthicon tube in TV camera
R	<i>By Filtering and colouring</i>	WR	Substrate for high-reliability film resistor
R2	Ultraviolet transmission		Glass electrode
R21	Germicidal lamp	WT	Conductive rowing for ignition cable
R22	Tubing	WV	Capacitor
R23	Sun-lamp envelop		
R25	Black-light tube	WX	
R27	Black-light bulb		
R28	Filter sheet	Y	<i>By Chemical and other property-based purpose</i>
R4	Heat and IR transmission		Container
R47	Heat-lamp bulb	Y1	Tank
R48	Black-light filter	Y11	Jar
R5	Technical coloured	Y12	Bottle
R51	Signal-ware	Y15	Tumbler
R53	Prismatic lens	Y16	Cooking utensil
R55	Roundel	Y3	Pipe line
R6	Colour filter	Y5	Tube
R61	Sheet	Y7	Centrifugal pump part
R63	Cover	YB	Laboratory apparatus
T	<i>By Special-radiation-property-based use</i>	YD	Fractionating column
T5	Glass laser	YG	Sight glass
T6	Laser beam reflector	YJ	Gauge glass
T7	Fibre optics	YM	<i>T (A2) into (A1) ends</i>
T8	Microwave transmitting radome	(1)	<i>By Make</i>
TD	X-ray dosimeter glass		<i>Note.— To be derived by Geographical Device (Illustrative)</i>
TF	Short ultrasonic delay line glass	(42)	Japanese
TG	IR dome	(73)	American
TH	Radioactivity-free photo-multiplier	(A)	<i>By Brand</i>
TJ	Radiation breakdown-proof window		<i>By Name of company</i>
TM	Glass beads for road paint		<i>Note.— To be derived by (AD).</i>
TN	Light sensitive		<i>(Illustrative)</i>
TN1	Sign	(C)	Coning Glass works
TN3	Radio face	(P)	Pilkington Brothers
TN6	Clock face	(PI)	Pittsburgh Plate Glass
W	<i>By Electronic-Electrical property-based purpose</i>		<i>By Name of variety</i>
W2	Insulation		<i>Note.— To be derived by (AD).</i>
W4	Lighting arrester body		<i>(Illustrative)</i>
W8	Condenser	(P)	Pyrex
WB	Fuse plug body		
WD	X-ray tube envelope		<i>By Code number</i>
WE	TV tube		<i>Note.— The given number to be used as (IN).</i>
WG	Mercury switch envelop		<i>(Illustrative)</i>
WH	Metalised glass container hermetically sealed	(8603)	8603
WK3	Metalised glass (High frequency electronic component)	(9606)	9606
		(9608)	9608

## GLASS TECHNOLOGY

	<i>Note.— The (1N) for the isolates derived by each of the above (Q1) are to be connected by " = ".</i>	c34 c4 c43 c6	Conveyor-belt type Semi-continuous lehr Pass type Zonal lehr
	<i>(Illustrative)</i>	d	<i>By Polishing equipment</i>
(C=8603)	Corning 8603	d2	Plastic
(C=P)	Corning Pyrex	d3	Cellulose
		d6	Felt
		d8	Pitch
	<i>Isolates in [M]</i>		
	Matter	f	<i>By Grinding equipment</i>
	<i>Note.— The isolates derived on the basis of the (Q1) 'By Substance' in [2P] are to be used. The (1N) taken from that schedule should be preceded by a " ; " (semicolon) when used to represent an isolate in [M]. (Illustrative)</i>	f1 f2 f3 f5 f51 f52 f8 fB fF fH	Sand paper Garnet Corundum Carbide Silicon Boron Diamond Loose form Grinding wheel Fabric felt
zGM1	Sodium chloride	h	<i>By Drilling equipment</i>
61	Sodium oxide	h5	Carbide drill
72	Magnesium oxide	h8	Bonded diamond drill
	Attribute		
	<i>Note.— The schedule of 'Common Property Isolates' already prepared (4) has been used.</i>	j j2 j25 j28 j3 j5 j8	<i>By Cutting equipment</i> Band saw Circular blade Wire blade File Carbide wheel Steel wheel
	<i>Isolates in [E]</i>		
	<i>Note.— The provisional schedule of 'Common Energy Isolates' (unpublished) has been used.</i>	m m1 m3 m5 m6 m8 mC mD mI mP mU mV mW	<i>By Shaping equipment</i> Blow pipe Lipping paddle Carbon stick Table Roll Corning ribbon machine Danner machine Ivanhoe machine Philips carousel machine Updraw machine Vello machine Westlake machine
	<i>Isolates in [2P]</i>		
a	<i>By Equipment</i>	p	Mold
	<i>T1 (A2) into (A1) begins</i>	p1	Coated
	<i>By operation</i>	p11	Shellac
	<i>By power</i>	p13	Varnish
b2	Mechanical	p14	Varnish and mixture of charcoal and linseed oil
b5	Electrical	pB	Block
	<i>By Method</i>	pD	Split
bC	Manual	pE	Font
bD	Automatic		
bF	Semi-automatic		
c	<i>By Annealing equipment</i>		
c1	Batch-type kiln		
c3	Continuous lehr		

pG	Paste		<i>figure and read it as an integer.</i>
pJ	Hot iron		
pM	Individual section		(Illustrative)
r	<i>By Forming equipment</i>	vM2	2
r1	Suction type	vM3	3
r11	Owens	w	<i>By Feeding (Charging) equipment</i>
r12	O'Neill	w1	Screw feeder
r15	Roirant	w3	Pusher-type feeder
r17	Monish	w5	Blanket batch type feeder
r6	Automatic god-fed		
r61	Lynch		
r63	Hartford IS	zb	<i>By Mixing equipment</i>
r64	J-P	zb1	Barrel
r65	MPS	zb15	Rotating
r67	PB		
r68	PBS	zd	<i>By Transfer equipment</i>
t	<i>By Stirring equipment</i>	zd1	Bucket elevator
t1	Bridgewall	zd2	Belt conveyer
t3	Floater	zd3	Screw conveyer
t5	Bubbler	zd5	Pneumatic conveyer
		zd8	Combination
v	<i>By Melting equipment</i>	zf	<i>By Storing equipment</i>
	Furnace	zf1	Silo
vB	<i>By Draught</i>	zf11	Hollow tile
vB1	Upward	zf13	Concrete
vB7	Downward	zf18	Steel
		zf5	Original package
vD	<i>By Shape</i>	zh	<i>By Unloading equipment</i>
vD1	Rectangular	zh3	Vibrator-gravity
vD5	Circular	zh4	Drag shovel
		zh6	Vacuum system
vF	<i>By Regeneration</i>		T1 (A2) into (A1) ends
vF1	Regeneration		
vF3	Recuperation	z1	<i>By Material used.</i>
vF5	Direct fired		T2 (A2) into (A1) begins
vH	<i>By Refractory</i>	z2	<i>By Foru</i>
vH1	Fusion cast	z21	Powder
vH2	Zircon	z25	Liquid
vH3	Silica	z26	Colloid
vH5	Fireclay	zB	<i>By Chilling agent</i>
vH7	High alumina	zB4	Fused salt
vBH	Basic	zB5	oil
vHD	Insulating	zB51	Kerosene
		zB8	Blast of air
vK	<i>By Kind</i>	zD	<i>By Decorating agent</i>
vK1	Clay pot	zD5	Liquid metal
vK11	Open		<i>Note.—To be derived by (AD) using international nomenclature.</i>
vK12	Covered		(Illustrative)
vK3	Day tank		Gold
vK5	Continuous tank		Pallad.um
vM	<i>By Number</i>	zDSAU	
	<i>Note.—Add the given</i>	zD5PD	

zE	<i>By Pool material in drawing</i>			<i>Note.— Add the given figure to the appropriate (IN) and read it as an integer.</i>
zE1	Inorganic salt			
zE5	Molten metal			
zG	<i>By Polishing agent</i>			<i>(Illustrative)</i>
zG3	Acid	9c2		2 days
zG5	Cerium oxide	9d3		3 hours
zG6	Zirconium oxide	9e55		55 minutes
zG7	Ferric oxide	9f55		55 seconds
				T1 (A3) into (A1) ends
zJ	<i>By Coupling agent</i>			
zJ1	Glycidoxyl propyl-trimethoxysilane	9g		<i>By Maximum-minimum temperature</i>
zJ3	Gamma-ammopropyl-trimethoxysilane			<i>Note.— Add the given figures for the maximum and minimum temperatures in that sequence interpolating a "—" between the two sets of digits. Read the result as an integer.</i>
zM	<i>By Binding agent</i>			<i>(Illustrative)</i>
zM1	Starch-oil combination			9g650→450 650 to 450° C
zR	<i>By Fining agent</i>			9g950→350 950 to 450° C
zR1	Oxide			
zR12	Cerium oxide			
zR13	Manganese oxide			
zR15	Antimony oxide	9g650→450		650 to 450° C
zR2	Peroxide	9g950→350		950 to 450° C
zR4	Halide			
zR41	Sodium chloride	9h		<i>By Cooling rate (Temperature drop/hr)</i>
zR43	Potassium chloride			<i>Note.— Add the given figure and read it as an integer.</i>
zR6	Chlorate			<i>(Illustrative)</i>
zR61	Perchlorate			9h15 15° C per hour
zR8	Nitrate			9h23 23° C per hour
zR81	Potassium nitrate			
zRB	Ammonium salt	9h15		
zRD	Sulphate	9h23		
zRF	Water			
zRJ	Steam	9j		<i>By Temperature (°C)</i>
				<i>Note.— Add the given figure and read it as an integer.</i>
	<i>By Raw Material</i>			<i>(Illustrative)</i>
	<i>Note.— Use the (IN) got on the basis of the (Q1) 'By Constituent' in [1P1]</i>	9j350		350° C
	<i>(Illustrative)</i>	9j1740		1740° C
6	Flux material	9k		<i>By Pressure (Kg/sq cm)</i>
63	Boron oxide			<i>Note.— Add the given figure and read it as an integer.</i>
81	Silicon dioxide			<i>(Illustrative)</i>
	T2 (A2) into (A1) ends	9k5=6		5·6 Kg/sq cm
9a	<i>By Conditions of operation</i>	9k8=4		8·4 Kg/sq cm
	T3 (A2) into (A1) begins			
9b	<i>By Time of operation</i>	9m		<i>By Tolerance (±)</i>
	T1 (A3) into (A1) begins			<i>Note.— Multiply the given figure by 10<sup>4</sup>, add the result to it and read it as an integer.</i>
9c	In days (over 24 hours)			<i>(Illustrative)</i>
9d	In hours (over 60 minutes)			± 0·0015
9e	In minutes (over 60 sec)	9m15		± 0·0021
9f	In seconds (Less than 60 seconds)	9m21		

	<i>By Quantity used</i>	9G32	Stencil
9p	In wt %	9G33	Banding
9q	In Kg	9G35	Rubber Stamping
	<i>Note.— Add the given figure to the appropriate (IN) and read it as an integer.</i>	9G36	Offset process
	<i>(Illustrative)</i>	9G37	Electrostatic print
9p55	55% by wt	9G38	Silk screen print
9q350	450 Kg	9G5	Staining
	<i>By Output</i>	9J	<i>By Polishing</i>
9s	<i>T2 (A2) into (A1) begins</i>		<i>T1 (A5) into (A1) begins</i>
9t	Per minute (Kg)	9L	<i>By Surface finish (A)</i>
9u	Per hour (Metric ton)		<i>Note.— Add the given figure and read it as an integer.</i>
9v	Per day (Metric ton)		<i>(Illustrative)</i>
9t2=5	2.5 Kg/min	9L50	50 Å
9u12	12 metric tons/day	9L61	61 Å
9u130	130 metric tons/day	9M	<i>By Flatness (cm/25cm)</i>
	<i>By Type of operation</i>		<i>Note.— Multiply the given figure by 10<sup>3</sup>, add the result to 94 and read it as an integer.</i>
91	Batch		<i>(Illustrative)</i>
93	Continuous	9M15	0.00015
96	Discontinuous	9M23	0.00023
9A	<i>By Stage</i>		<i>By Method</i>
	<i>T3 (A3) into (A1) begins</i>	9R	Acid (70% HF1 + 98%
9B	<i>By Quality improvement</i>	9P3	H <sub>2</sub> SO <sub>4</sub> ; 50-50)
9B4	<i>By Tempering (Prestressing)</i>	9P4	Fire polish
9B8	Heating and chilling		<i>T (A5) into (A1) begins</i>
	Gas hearth process	9R	<i>By Grinding</i>
9C	<i>By Chemical toughening</i>		<i>T (A6) into (A1) begins</i>
9C2	<i>By Ion exchange</i>	9S	<i>By Removal rate</i>
9D	<i>By Finishing</i>		<i>Note.— Multiply the given figure by 10<sup>3</sup>, add the result to 9S and read it as an integer.</i>
	<i>T (A4) into (A1) begins</i>		<i>(Illustrative)</i>
9E	<i>By Sealing</i>	9S5	0.05
	<i>By Material to which sealed</i>	9S11	0.11
9E1	Metal		<i>By Finish</i>
9E3	Ceramics	9T	(Arithmetic average)
9E4	Glass		<i>Note.— Add the given figure and read it as an integer.</i>
9E5	Plastics		<i>(Illustrative)</i>
	<i>By Method</i>	9T3	3
9EB	Blowing	9T4=5	4.5
9ED	Pulling		<i>T2 (A5) into (A1) ends</i>
9EF	Heating		
9G	<i>By Decoration</i>		
9G1	Acid etching		
9G2	Copper wheel engraving		
9G3	Glazing		
9G31	Brush		



9V	<i>By Drilling</i>	D2	Sagging
9V3	Ultrasonic + abrasive	D3	Shrinking
9V5	Electronic beam	D5	Foaming
		D7	Leaching
9X	<i>By Cutting</i>	D8	Multi-form process
9X1	Flame cut off	E1	Fourcault
9X2	Sawing	E2	Libbey-Owens
9X3	Score breaking	E3	Pittsburgh plate glass
9X4	Score-thermal crack off	E4	Bishernoux
9X6	Thermal crack off	E5	Ford
		E6	Pilkington
	<i>By Stress relief</i>		
B1	Annealing		<i>By Melt preparation</i>
		G1	Conditioning
	<i>By Form/Shape production</i>	G3	Bubbling
C1	Repressing	G5	Stirring
C2	Redrawing		
C4	Dry gaging	J	<i>By Fining</i>
C6	Flame blowing	J1	Raising temperature
C8	Air blowing	J2	Pressure applicatoin
CB	Drawing		
CB1	Upward		<i>By Batch preparation</i>
CD	Rolling	M2	Charging
CG	Floating (Pilkington process)	M4	Mixing
		M6	Weighing
CH	Casting		
CJ2	Slip casting		<i>By Raw material preparation</i>
CJ5	Centrifugal casting	P1	Storing
CM	Blowing	P4	Movement to store
CP	Pressing	P6	Unloading
D1	Lamination		

## 8 EXAMPLES

- 1 F8,445;a247:a3,B1-c6-bD *where*  
 F8,445;a247:a3, GLASS, Stress, Removal,  
 B1-c6-bD ANNEALING, Zonal lehr,  
 Automatic operation
- N65 BOWMAN (E W) and WILLIAMS (J H). Annealing of glass with the automated zonal lehr. (Nat glass budg. 80, 42; 1965; 16-9).
- 2 F8,445;f6M-f610gF8,445-89CE;07CE3=cE4 *where*  
 F8,445;f6M-f610g GLASS, Acid resistance *influenced by*  
 F8,445-89CE;07CE3 CONSTITUENT: Cerium 3-Cerium 4  
 =CE4 ratio
- N62 GOTTARDI (V), PAOLETTI (G) and TORNATI (M). Ratio  $Ce^{3+}/Ce^{4+}$  in the melting of different glasses and its influence on their properties. (Vetro silic. 6,35;1962;12-6). (Glass tech abstr. 7; 1966;655)  
 [Cross reference entries may be prepared for the other subjects dealt with in the document].

- 3 F8,445,07;a241;b330gF8,4450;a247 *where*  
 F8,445,07; a241;b330g GLASS, Surface,  
 F8,44;a247 FLAW, Distribution *influenced by*  
 N66 GREENE (C H). Surface flaws in glass and the statistics of flaw STRESS in glass  
 distribution. (Glass tech. 7;1966;54-66).  
 F8,445-09C;cJ:fR *where*
- N66 F8,445-09C; GLASS, Chemically, strengthened  
 cJ:fR FATIGUE, Test  
 I C G, SUB-COMMITTEE A6. Practical strength of a chemically toughened glass. (Silic industr. 31;1965;165-7). (Phys chem glass, abstr. 7;1966;605).
- 5 F8,445-0E;b733-cP:b1 *where*  
 F8,445-0E; GLASS, Melt,  
 b733-cP:b1 CONVECTIVE FLOW, Heating, calculation
- N65 VON PESCHKE (J). Calculation of convective flows which occur in glass melts. (Glastech ber. 38;1965;276-81). (Glass tech abstr. 7;1966;500).
- 6 F8,445-9e-81056=8-79SB1=4-79L10=1-77015=3-7502=5-7401=5-7201=4-7100=6-63016=1-6201-6104=2-0E0(vK3); a76:fD,S *where*  
 F8,445-9e- GLASS, Borosilicate type,  
 81056=8- NETWORK FORMER: SiO<sub>2</sub> 56-8%,  
 79SB1=4-79L10=1-77015 STABILISER MODIFIER (%):  
 =3-7502=5-7401=5- Sb<sub>2</sub>O<sub>3</sub> 1.4, Li<sub>2</sub>O 0.1, PbO  
 7201=4-7100=6- 1.5, Al<sub>2</sub>O<sub>3</sub> 2.5, BaO  
 1.5, MgO 1.4, CaO 0.6,  
 63016=1-6201-6104=2- FLUX(%): B<sub>2</sub>O<sub>3</sub> 16.1, K<sub>2</sub>O 1, Na<sub>2</sub>O 4.2,  
 0E0(vK3); MELT, Tank,  
 a76: HOMOGENEITY,  
 fD,S ANALYSIS, Shelyubskii method  
 N66 SHILLING (G) and WEISS (W). Experiments to determine the homogeneity of glasses by the Shelyubskii method. (Glass tech. 7;1966;66-71).
- 7 F8,445-9f-81045 → 65-75010 → 20-7205 → 20-7103 → 25;cB70gF8, 445:d2,1 *where*  
 F8,445-9f- GLASS, Alumino-silicate type,  
 81045 → 65- NETWORK FORMER: SiO<sub>2</sub> 45-65%,  
 75010 → 20-7205 → 20- STABILISER/MODIFIER (%): Al<sub>2</sub>O  
 7103 → 25; 10-20, MgO 5-20, CaO 3-25,  
 cB70g CRYSTALLINITY *influenced by*  
 F8,445:d2,1 NUCLEATING AGENT
- N66 LEGER (L) and BRAY (J). Experimental study of the controlled crystallisation of alkaline earth silico aluminates glasses. (Glass tech. 7;1966;134-42). [Cross reference entries may be prepared for the other subjects dealt with in the document].

- 8 F8,445-9f-81058 → 2-79L10 → 1-7806 → 3-75024-61010 → 2-c7J695-09C2; a24760gF8,445; c231: 02,9C20(9b-9j) *where*
- F8,445-9f-81058 → 2-79L10 → 1-7806 → 3-75024-61010 → 2-c7J695-09C2;  
 F8,445-9f-81058 → 2-79L10 → 1-7806 → 3-75024-61010 → 2-c7J695-09C2;  
 a24760g  
 F8,445; c231: 02,9C20(9j-9b)
- GLASS, Alumino-silicate type, NETWORK FORMER:  $\text{SiO}_2$  58.2, STABILISER/MODIFIER (%):  $\text{Li}_2\text{O}$  0.1,  $\text{TiO}_2$  6.3,  $\text{Al}_2\text{O}_3$  24, FLUX:  $\text{Na}_2\text{O}$  10.2% STRAIN POINT: 695°C CHEMICAL STRENGTHENING: Ion exchange method STRESS CURVE influenced by STRENGTH, Improvement, ION EXCHANGE METHOD, Temperature of operation, Time of operation
- N66 BURGGRAAF (A J). Strengthening of glass by ion exchange. Part 2 Stress formation and stress relaxation after ion exchange in alkali alumino-silicate glasses in connection with structural changes in the glass. (Phys chem glass. 7; 1966; 169-72).
- 9 F8,445-9F:d2,E2-CB1-zE5AL *where*
- F8,445-9F:d2,E2-CB1-zE5AL
- GLASS, SHEET, Production LIBBEY-OWENS Process, Upward drawing, Pool material: Molten aluminium
- N65 PLUMAT (E). Upward drawing of sheet glass. (U S patent. 3, 193, 365 (1965)).
- 10 F8,445-9W-9c-89BE0 → 8-81040 → 55-7L10 → 1-1-75019 → 20-7205 → 20-63010 → 20-c2R.506 → 730-c2B9 → 12 = 3-c1D2 → 2 = 47 *where*
- F8,445-9W-9c-89BE0 → 8-81040 → 55-7L10 → 1-1-75019 → 20-7205 → 20-63010 → 20-c2R.506 → 730-c2B9 → 12 = 3-c1D2 → 2 = 47
- GLASS, Fibre BOROSILICATE TYPE, NETWORK FORMER (%):  $\text{BeO}$  0-8,  $\text{SiO}_2$  40-55, STABILISER/MODIFIER (%):  $\text{Li}_2\text{O}$  0.1-1.0,  $\text{Al}_2\text{O}_3$  19-20,  $\text{MgO}$  5-20, FLUX:  $\text{B}_2\text{O}_3$  10-20%, PHYSICAL PROPERTY: Tensile strength 506-730, Youngs Modulus 9-12.3, Density 2-2.47
- N65 THOMAS (G L). High tensile strength, low density glasses for fibre manufacture. (U S patent. 3,183,104 (1965)). (Glass tech abstr. 7; 1966; 492).
- 11 F8,445-9Y-zF0(9T); 20gF8,445-zF0(9T); 1; b6 *where*
- F8,445-9Y-zF0(9T); 20gF8,445-zF0(9T); bF22; b6
- GLASS PURPOSE: Foam Glass, STARTING MATERIAL: Glass powder, STRUCTURE influenced by RAW MATERIAL, Grain, Size

- N64 CZERWINSKI (Z). Relationship between the foaming process and the specific surface of the glass grains used. (Szklo ceram. 15:1964:199-201). (Glass tech, abstr. 7;1966:67).  
[A cross reference entry may be prepared for the other subjects dealt with in the document].
- 12 F8,445-J1-8202=8-8108=2-79L101-78037-7502=4-74044=1-730=2-7103=5-610=4-24BA1=3-cR3B1=91→1=93 *where*
- F8,445- GLASS,  
J1- PURPOSE: Bead,  
8202=8-8108=2- NETWORK FORMER (%):  $B_2O_3$  2·8,  
  $SiO_2$  8·2,  
79L10=1-78037-7502= STABILISER/MODIFIER (%):  
4-74044=1-730=2-  $Li_2O$  0·1,  $TiO_2$  37,  $Al_2O_3$   
7103=5- 2·4,  $BaO$  44·1,  $ZnO$  0·2,  $CaO$  3·5,  
610=4- FLUX:  $Na_2O$  0·4  
24BA1=3 BARIUM FLUORIDE: 1·3%  
cR3B1→91→1=93 REFRACTIVE INDEX: 1·91-1·93
- N65 ALEXANDER (E M) and LABINO (D). Glass of high refractive index for making glass beads. (U S patent. 3,193,401 (1965)). (Glass tech, abstr. 7;1966:496).
- 13 F8,445-T7-9e-81035→50-79R15→25-7503→11-63022→38-cR73B1=5-cQL75-c7G715 *where*
- F8,445- GLASS,  
T7- PURPOSE: Fibre optics  
9e- BOROSILICATE TYPE,  
81035→50- NETWORK FORMER:  $SiO_2$  35-50%  
79R15→25-7503→11- STABILISER/MODIFIER (%):  $Rb_2O$   
 15-25,  $Al_2O_3$  3-11  
63022→38- FLUX:  $B_2O_3$  22-38%,  
cR73BJ- REFRACTIVE INDEX: 1·5,  
cQL75- THERMAL EXPANSION:  $75 \times 10^{-7}$   
c7G715 SOFTENING POINT: 715°C.
- N65 HAGEDORN (E C). Glass for fibre optics. (U S patent. 3,198 642 (1965)). (Glass tech, abstr. 7;1966:669).
- 14 F8,445-TD-9n-8L191-8AL4=85-8AG1=07-7603=08-e52B *where*
- F8,445, GLASS,  
TD- PURPOSE: Dosimeter  
9n- PHOSPHATE TYPE,  
8L191-8AL4=85- NETWORK FORMER (%):  $LiPO_4$   
8AG=07- 91,  $AlI$ ·07,  $(PO_3)_2$  4·85,  $AgPO_3$   
7603=08- STABILISER/MODIFIER:  $B_2O_3$  %  
e52B PHOTOLUMINESCENCE: Low
- N65 BECKER (K). New dosimeter glass with improved properties. (Nucl instrum meth 36;1965:323-4).
- 15 F8,445-Y1-9b-81072→74=1-709=1→13=1-6015→16=8-cQP88=2-c7J497-c7H539-c7G714-c7E176-c7C1207-c1D2=4997-a7B-a2G35-a2E3 *where*
- F8,445- GLASS,  
Y1- PURPOSE: Container

9b-	SILICATE TYPE,
81072→74=1-	NETWORK FORMER: SiO <sub>2</sub> 72-74-1%
709=1→13=1-	STABILISER/MODIFIER: Oxides 9-1-13-1%,
6015→16=8-	FLUX: 15-16-8%,
cQP88=2-	THERMAL EXPANSION: $88 \cdot 2 \times 10^{-7}$
c7J497-c7H539-c7G714-	VISCOSITY POINTS: Strain point 497° C, Annealing point 539° C,
c7E176-c7C1207-	Softening temperature 714° C, Working range index 176, Relative gob temperature 1207° C
c1D2=4997-	DENSITY: 2.4997 g/cm <sup>3</sup>
a7B-	HOMOGENEITY: Grade B,
a2G35-a2E3	SEEDS AND BLISTERS: 35 per 30 g; Blister 3 per 30 g
N65	SONNE (C R) and LESTER (W R). Container glass compositions (1932-64). (Glass industr. 46;1965;132-7, 163-4, 198-201 236-7).

## 9 BIBLIOGRAPHICAL REFERENCES

- 1 Sec 0 NEELAMEGHAN (A), GOPINATH (M A), and DENTON (P H). Motor vehicle production: Depth classification: A demonstration. (Lib sc. 4; 1967; Paper H).
- 2 Sec 312 —, —, and —. (*ibid.* Sec 5).
- 3 Sec 42 —, —, and —. (*ibid.* Sec 91).
- 4 Sec 315 RANGANATHAN (S R). Common property isolates. (An lib sc. 7; 1960; 1-12).
- 5 Sec 0 —. Design of depth classification: Methodology. (Lib sc. 1; 1964; Paper A).