

# Polyhedra and packings from hyperbolic honeycombs - Supporting information

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## SI.1. SI Text.

**SI.1.1. Orbifold notation for symmetries and groups.** We explore the discrete symmetries of the 2-dimensional  $[3, N]$  patterns and associated groups using Thurston's concept of orbifolds (1), named according to Conway's notation (2, 3). The notation is used as in a previous paper (4).

The regular triangulations  $\{3, N\}$  tessellate  $\mathbb{S}^2$ ,  $\mathbb{E}^2$ , or  $\mathbb{H}^2$  to form kaleidoscopic patterns, whose asymmetric domains are triangles bounded by mirrors; these are  $*23N$  orbifolds. The decoration of an orbifold domain is shown in Figure 1. As an example, a tessellation of  $\mathbb{H}^2$  from decorated  $*237$  fundamental domains is shown in Figure SI.1.

The symmetries of this type of patterns are described by the associated triangle groups. We label the generators of the group with orbifold  $*23N$  by  $R_2$ ,  $R_3$ , and  $R_N$ , where  $R$ 's denote reflections, and the index on the generators denotes the order of the symmetry site opposite the edge. Thus, the generators of a group with orbifold symbol  $*23N$  obey the following relations:

$$I = R_2^2 = R_3^2 = R_N^2 = (R_N R_3)^2 = (R_2 R_N)^3 = (R_3 R_2)^N$$

where  $I$  is the identity element of the given group.

The Euler characteristic for a net containing  $V, E, F$  vertices, edges and faces respectively is given by  $\chi = V - E + F$ . If we normalise by the number of vertices,  $V$ , recognising that  $E/V = N/2$  and  $F/V = N/3$  for any net of topology  $[3, N]$ , we obtain:

$$\chi_{v,[3,N]} = \frac{6 - N}{6} \quad [1]$$

Since the regular patterns contains  $2N$  copies of the  $*23N$  surrounding each vertex, the characteristic per orbifold domain is given by:

$$\chi_{*23N} = \frac{6 - N}{12N}$$

We use the scaled characteristics,  $\chi_{v,[3,N]}$  and  $\chi_{*23N}$ , as follows. The global Gauss-Bonnet theorem relates  $\chi$  to an unbounded surface's integral Gaussian curvature,  $K$ :

$$\int \int K da = 2\pi\chi$$

Since  $|K| = 1$  for  $\mathbb{S}^2$  and  $\mathbb{H}^2$ ,  $i\chi_{v,[3,N]}$  and  $i\chi_{*23N}$  are equal to the areas per vertex and orbifold respectively on  $\mathbb{S}^2$  ( $i = 1$ ) and  $\mathbb{H}^2$  ( $i = -1$ ).

**SI.1.2. Subgroup construction and identification.** The construction of subgroups was done as follows:

1. We construct the related cosets for a given subgroup, via the generators of the individual subgroups derived from GAP.
2. We then visualise those cosets by colouring tessellations of  $\mathbb{H}^2$  by fundamental domains of the parent group following the procedure described in (5). For example, Figure SI.3(a) shows the cosets of subgroup 7 of the group  $*239$ . The colouring

corresponds to the subgroup conjugacy class element, whose generators are listed in table SI.4. We then visually identify the orbifold from the coloured pattern: for example, the colouring Figure SI.3(a) described the  $23 \times$  orbifold.

3. Identify the fundamental domain of the subgroup, using the fixed points of the group action defined by the coloured pattern and the coloured tiles. This domain necessarily contains one fundamental domain of the parent group of each color. The number of colours in the subgroup domain is the index of the given subgroup in the parent group. See, for example, Figure SI.3(b). En route, we use GAP to form the relations between the generators of the given subgroup.

**SI.1.3. Software.** The graphics and computations presented in this paper were done using the NetworkX- (6) and the Matplotlib-extensions (7) of Python as well as Graphviz (8).

All group theoretic calculations were performed using GAP (9) via Sage (10) in conjunction with the KBMAG-package (11).

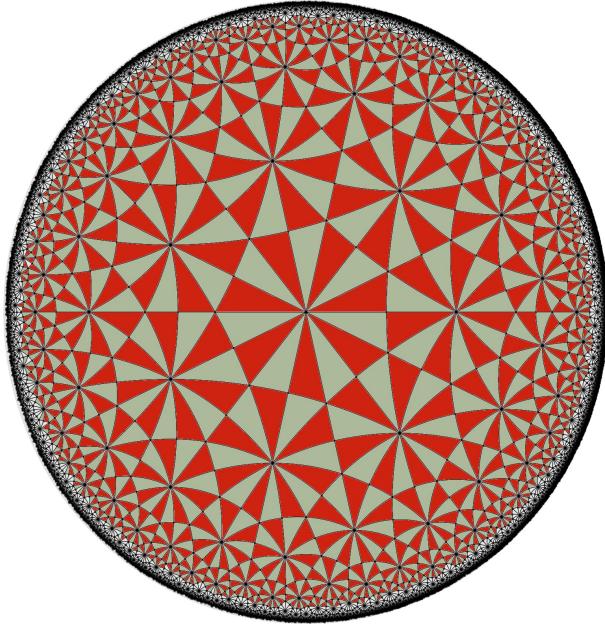
Our renderings of decorations of minimal surfaces are done using SideFX Houdini (12). The images of triangulations embedded (or in some cases immersed) in  $\mathbb{E}^3$  were all produced using CrystalMaker.

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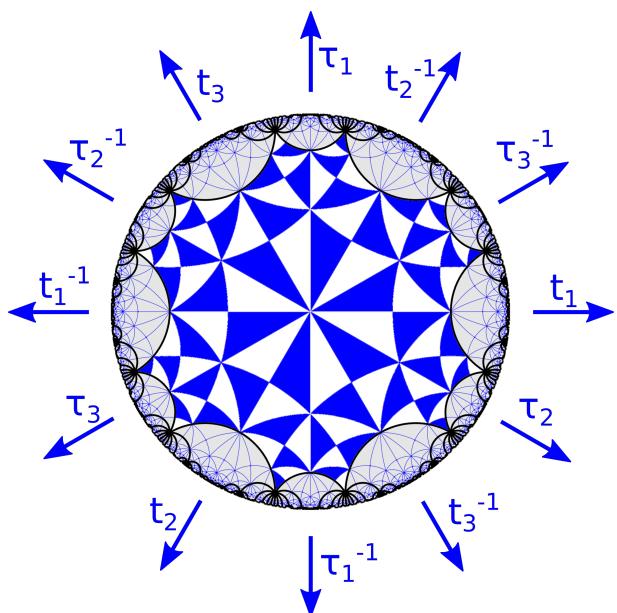
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**SI.2. SI Figures.**

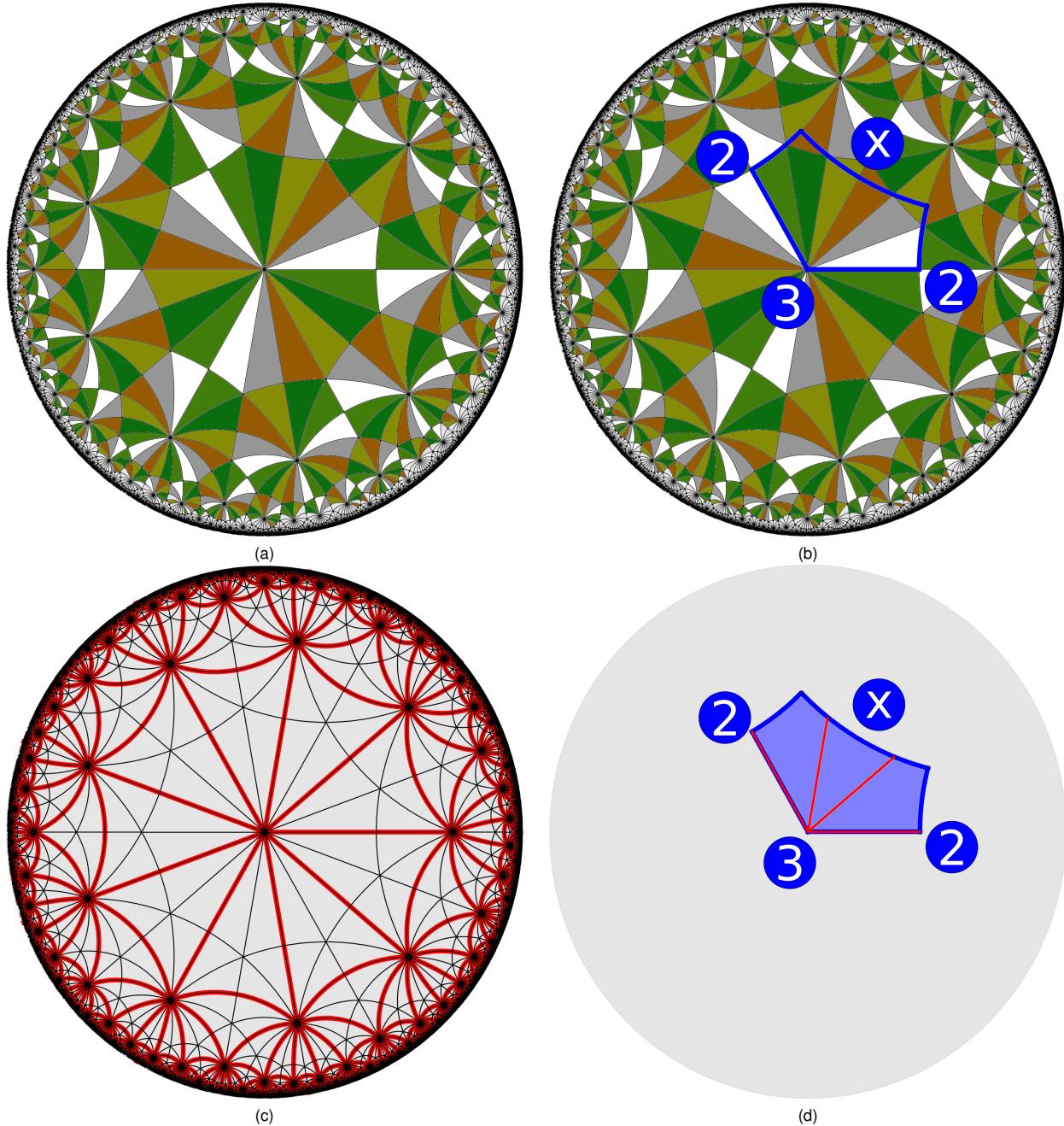
**Fig. SI.1.** A tessellation of  $\mathbb{H}^2$  by fundamental domains of the group denoted \*237 shown using the Poincaré disk. The individual tiles are alternately colored for clarity.



**Fig. SI.2.** 96 \*246 domains forming the translational subgroup of the *P*, *D*, and *Gyroid* surfaces, which we denote  $\circ\circ\circ$  (13, 14). The labeled arrows indicate the translations in  $\mathbb{H}^2$ , which are to be identified with lattice translations in  $\mathbb{E}^3$ . The explicit conversion for each of the surfaces are given in Table SI.1.

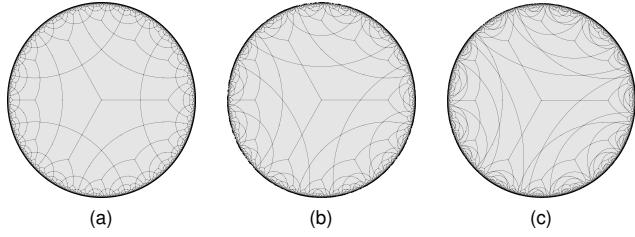


**Fig. SI.3.** Graphical explanation of the motif refinement process. (a): A tesselation of  $\mathbb{H}^2$  by fundamental domains of \*239 shown on the Poincaré disk. The individual tiles have been colored by the coset of subgroup 7 in Figure SI.7 to which they belong. (b): as outlined in the text, the fundamental domain of the subgroup is easily identified from the colored pattern. In this case, the orbifold symbol is  $23\times$  (note that the pattern only has one unique two-fold symmetry). (c): By applying the decoration shown in Figure 1 to the initial tesselation of  $\mathbb{H}^2$  by fundamental domains of \*239, we get the maximally symmetric embedding of a [3, 9]-pattern on the Poincaré disk. (d): By superimposing the images in (b) and (c), we obtain a decoration of a fundamental domain for  $23\times$ , the orbit of which yields a [3, 9]-pattern.

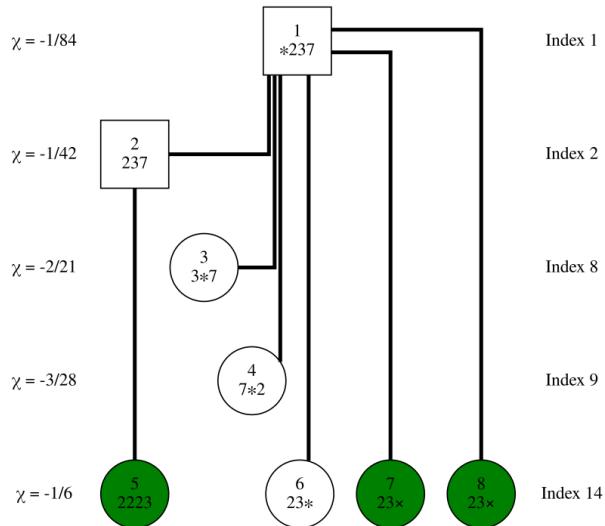


**Fig. SI.7.** As Figure SI.5 but for the group denoted by  $*239$ .

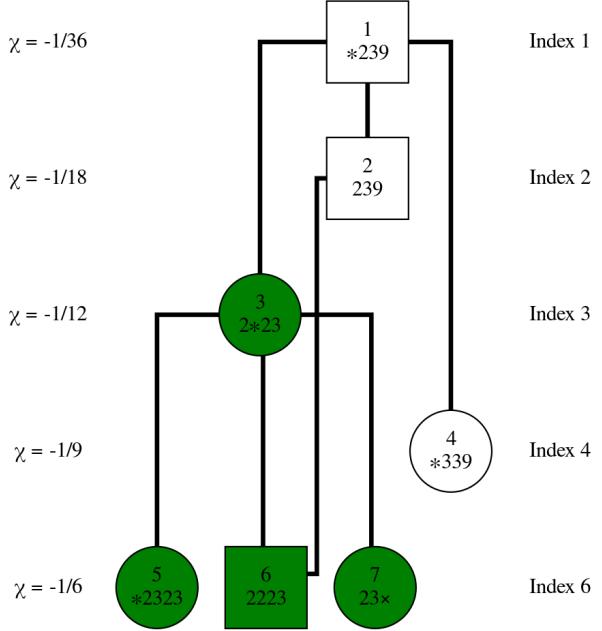
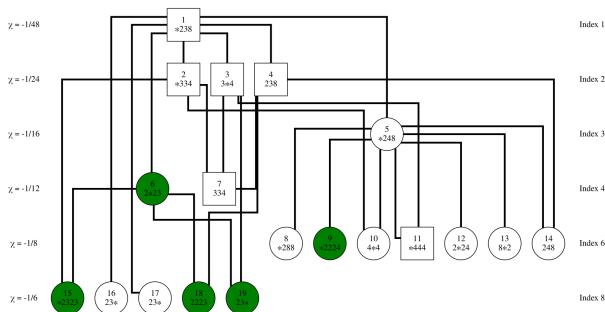
**Fig. SI.4.** Graphical explanation of orbifold deformations. Each image shows a different way of embedding the orbifold  $2223$  within the group  $*246$ . Using the notation found in the literature (15, 16), we label these embeddings  $2223_{01}$ ,  $2223_{11}$ , and  $2223_{21}$ .



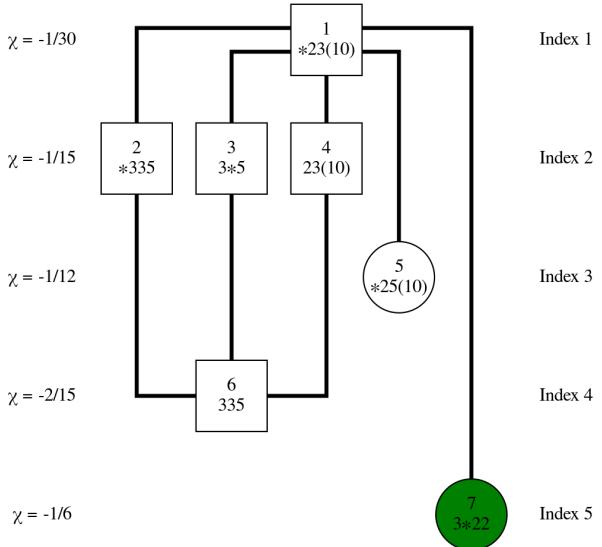
**Fig. SI.5.** Subgroup lattice graph of the lowest-index subgroups of the group denoted by  $*237$  along with their index in the group as well as their Euler characteristic. Groups represented by a square are normal subgroups in the group denoted by orbifold symbol  $*237$ , whereas the ones represented by a disc are not. Subgroups commensurate with the symmetries of the  $P$ ,  $D$ , and *Gyroid* surfaces are highlighted in green.



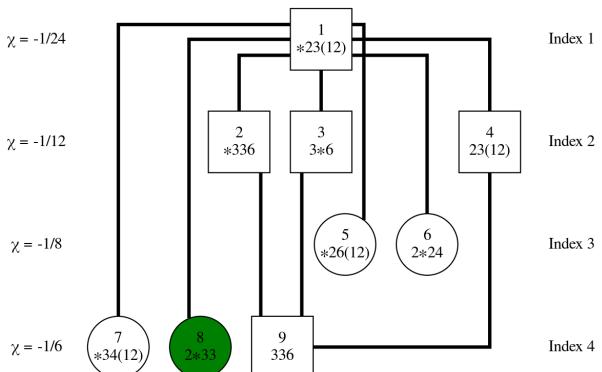
**Fig. SI.6.** As Figure SI.5 but for the group denoted by  $*238$ .



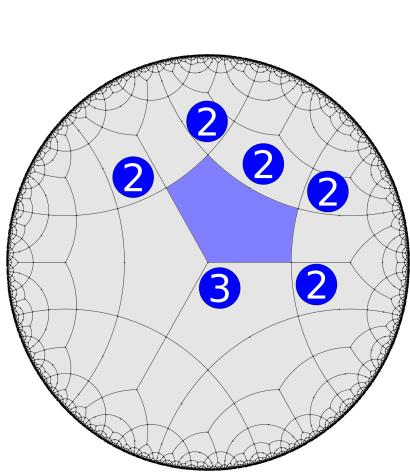
**Fig. SI.8.** As Figure SI.5 but for the group denoted by  $*23(10)$ .



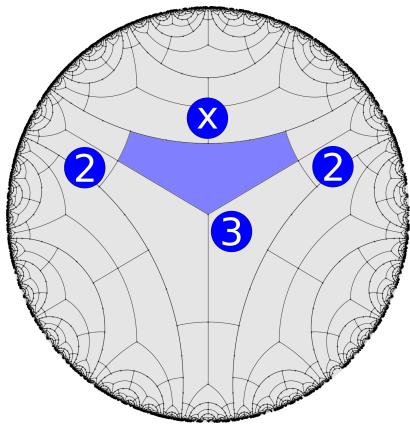
**Fig. SI.9.** As Figure SI.5 but for the group denoted by  $*23(12)$ .



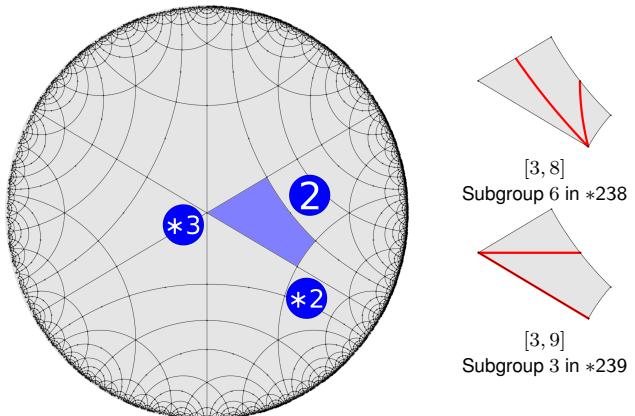
**Fig. SI.10.** An tessellation of the Poincaré disk by the fundamental domain of a group with orbifold symbol 2223 along with decorations the orbit of which produce a hyperbolic pattern with a given topology. A single fundamental domain and its cone points along with their defining symmetry operations have been highlighted in blue. Note that the fundamental domain only has three unique two-fold rotational symmetries. The resulting topology as well as the subgroup number in the relevant  $*23N$ -group yielding the presented decoration can be found underneath each decoration. The tiling of 2223 fundamental domains has been aligned to match the symmetry points of the symmetry group of the P-, D-, and G-surfaces, which we label \*246.



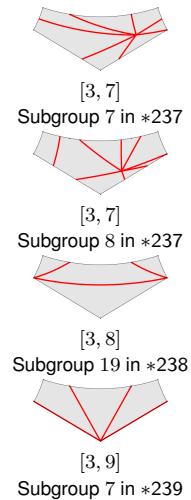
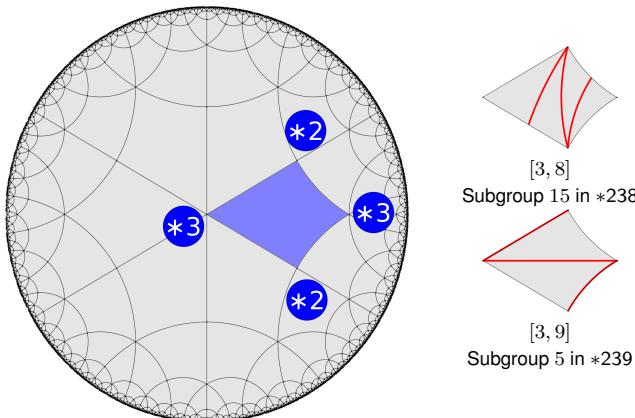
**Fig. SI.11.** As Figure SI.10 but for  $23\times$ . Note that the  $\times$ -operation reverses the orientation of a tile and its motif. The last decoration corresponds to the one presented in Figure SI.3(d).



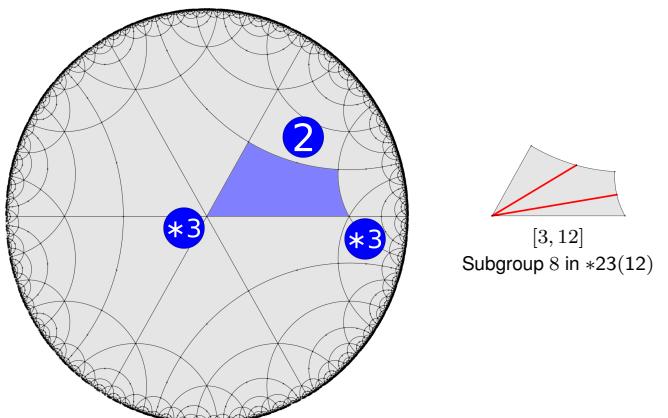
**Fig. SI.12.** As Figure SI.10 but for  $2*23$ .



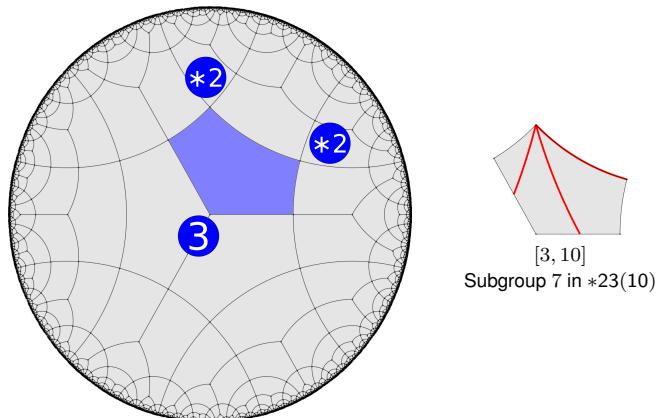
**Fig. SI.13.** As Figure SI.10 but for  $*2323$ .



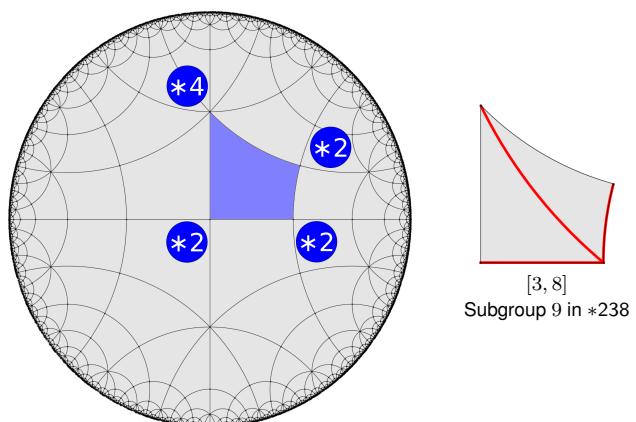
**Fig. SI.14.** As Figure SI.10 but for  $2*33$ .



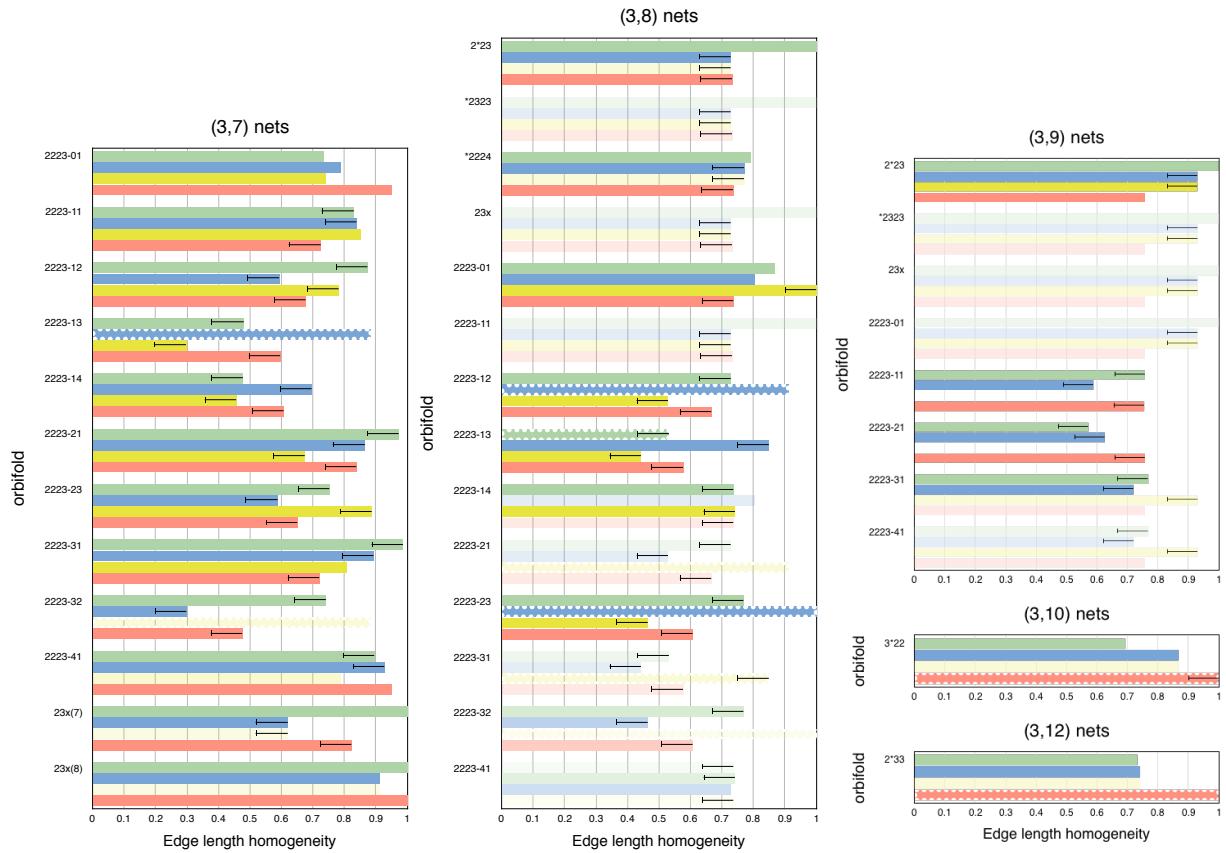
**Fig. SI.15.** As Figure SI.10 but for  $3*22$ .



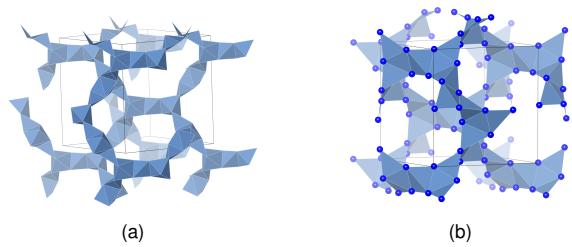
**Fig. SI.16.** As Figure SI.10 but for  $*2224$ .



**Fig. SI.17.** Homogeneity of the edge lengths for minimally frustrated embeddings in three-space of the regular  $3^7$ ,  $3^8$ ,  $3^9$ ,  $3^{10}$  and  $3^{12}$  triangulations of the hyperbolic plane. Most embeddings form infinite triangular polyhedra (apeirohedra) in  $\mathbb{E}^3$ . Equal edges are characterised by unit homogeneity. Polyhedra are labelled by their hyperbolic orbifold and coloured according to their surface;  $D$ ,  $P$  and the pair of *Gyroid* embeddings (1 and 2) are coloured red, green, blue and yellow respectively. Less saturated bars represent duplicate polyhedra. If the minimal distance between non-adjacent vertices is less than the minimum edge length, the bar contains a “ $-$ ” symbol. Bars free of that symbol indicate patterns that can form simplicial sphere packings in  $\mathbb{E}^3$ , and, if their homogeneity is one, deltahedral sphere packings. Polyhedra that result from edge-collapsed nets are marked by scalloped bars. Blank entries indicate structures unable to be processed with Systre.



**Fig. SI.18.** Two non-embedded vertex-transitive infinite simplicial polyhedra derived from *Gyroïd* embeddings: (a)  $3^7$  via  $2223_{13}$  and (b)  $3^8$  via  $2223_{12}$ .



### SI.3. SI Tables.

**Table SI.1.** Our scheme for relating translations in  $\mathbb{H}^2$  to lattice translations of given minimal surfaces in  $\mathbb{E}^3$ . Given three euclidean lattice vectors,  $a$ ,  $b$ , and  $c$ , we relate the generators of the hyperbolic translational group (with orbifold symbol  $\circ\circ\circ$ ), which were outlined by Robins et al. (5) and Sadoc & Charvolin (13), to translations described by these vectors. Note that we have two ways of constructing a Gyroid-based pattern; see Robins et al. (14) for details.

Translation	P	D	G <sub>1</sub>	G <sub>2</sub>
$t_1$	$a$	$a - c$	$a$	$a$
$t_2$	$b$	$b - a$	$b$	$c$
$t_3$	$c$	$c - b$	$c$	$b$
$\tau_1$	$c - b$	$-b$	$-a - b$	$a + b$
$\tau_2$	$a - c$	$-c$	$-b - c$	$c + a$
$\tau_3$	$b - a$	$-a$	$-c - a$	$b + c$

**Table SI.2. The lowest index subgroups of the group with orbifold symbol \*237, their orbifold symbol, their index, their Euler characteristic,  $\chi$ , the size of their conjugacy class,  $|c|$ , and the generators of the group. In case a subgroup is not normal, only the generators for a selected member of the conjugacy class are shown. As explained in the main text, we restrict ourselves to groups with  $\chi \geq -1/6$ .**

Number	Orbifold symbol	Index	$\chi$	$ c $	Generators
1	*237	1	-1/84	1	$R_2, R_3, R_7$
2	237	2	-1/42	1	$R_3 R_2, R_7 R_2$
3	3*7	8	-2/21	8	$R_2, R_3,$ $R_7 R_2 R_3 R_2 R_3 R_7 R_2 R_3 R_2 R_3 R_2 R_7$
4	7*2	9	-3/28	9	$R_2, R_3 R_7 R_2 R_3 R_2 R_3$
5	2223	14	-1/6	14	$R_7 R_2, R_3 R_2 R_7 R_3 R_2 R_3,$ $R_2 R_3 R_2 R_3 R_2 R_7 R_3 R_2 R_3 R_2 R_3 R_2$
6	23*	"	"	14	$R_2, R_7 R_3,$ $R_3 R_2 R_3 R_2 R_3 R_7 R_2 R_3 R_2 R_7 R_2 R_3 R_2 R_3 R_2 R_3$
7	23×	"	"	14	$R_7 R_2, R_3 R_2 R_7 R_3 R_2 R_3,$ $R_2 R_3 R_2 R_3 R_2 R_3 R_2 R_7 R_2 R_3 R_2 R_3 R_2 R_3$
8	23×	"	"	14	$R_7 R_2, R_2 R_3 R_2 R_3 R_2 R_7 R_3 R_2 R_3$
⋮	⋮	⋮	⋮	⋮	⋮

**Table SI.3. As table SI.2 but for \*238.**

Number	Orbifold symbol	Index	$\chi$	$ c $	Generators
1	*238	1	-1/48	1	$R_2, R_3, R_8$
2	*334	2	-1/24	1	$R_2, R_8, R_3 R_2 R_3$
3	3*4	"	"	1	$R_3, R_8 R_2$
4	238	"	"	1	$R_3 R_2, R_8 R_2$
5	*248	3	-1/16	3	$R_2, R_3, R_8 R_2 R_3 R_2 R_8$
6	2*23	4	-1/12	4	$R_2, R_8, R_3 R_2 R_8 R_3 R_2 R_3$
7	334	"	"	1	$R_8 R_2, R_3 R_2 R_3 R_2$
8	*288	6	-1/8	3	$R_2, R_3, R_8 R_2 R_3 R_2 R_3 R_2 R_3 R_2 R_8$
9	*2224	"	"	3	$R_2, R_3 R_2 R_3, R_8 R_2 R_3 R_2 R_8,$ $R_3 R_8 R_2 R_3 R_2 R_8 R_3$
10	4*4	"	"	3	$R_2, R_3 R_2 R_3, R_8 R_2 R_3 R_2 R_8 R_3$
11	*444	"	"	1	$R_3, R_2 R_3 R_2, R_8 R_2 R_3 R_2 R_8$
12	2*24	"	"	3	$R_3, R_2 R_3 R_2, R_8 R_2 R_3 R_2 R_8 R_2$
13	8*2	"	"	3	$R_3, R_8 R_2 R_3 R_2$
14	248	"	"	3	$R_3 R_2, R_8 R_2 R_3 R_2 R_8 R_2$
15	*2323	8	-1/6	4	$R_2, R_8, R_3 R_2 R_3 R_2 R_3 R_2 R_3,$ $R_3 R_2 R_3 R_8 R_2 R_3 R_2 R_3 R_2 R_8 R_3 R_2 R_3$
16	23*	"	"	8	$R_2, R_8 R_3,$ $R_3 R_2 R_3 R_2 R_3 R_8 R_2 R_3 R_2 R_3 R_2 R_3$
17	23*	"	"	8	$R_3, R_2 R_8 R_3 R_2,$ $R_8 R_2 R_3 R_2 R_3 R_2 R_3 R_2$
18	2223	"	"	4	$R_8 R_2, R_3 R_2 R_8 R_3 R_2 R_3,$ $R_2 R_3 R_2 R_8 R_3 R_2 R_3 R_2$
19	23×	"	"	4	$R_8 R_2, R_2 R_3 R_2 R_3 R_8 R_2 R_3$
⋮	⋮	⋮	⋮	⋮	⋮

**Table SI.4. As table SI.2 but for \*239.**

Number	Orbifold symbol	Index	$\chi$	$ c $	Generators
1	*239	1	-1/36	1	$R_2, R_3, R_9$
2	239	2	-1/18	1	$R_3 R_2, R_9 R_2$
3	2*23	3	-1/12	3	$R_2, R_9 R_3, R_3 R_2 R_3 R_2 R_3$
4	*339	4	-1/9	4	$R_2, R_3,$ $R_9 R_2 R_3 R_2 R_3 R_2 R_9$
5	*2323	6	-1/6	3	$R_2, R_3 R_2 R_3 R_2 R_3,$ $R_3 R_2 R_9 R_2 R_3, R_9 R_2 R_3 R_2 R_9$
6	2223	"	"	1	$R_9 R_3, R_2 R_9 R_3 R_2,$ $R_3 R_2 R_3 R_2 R_3 R_2$
7	23×	"	"	3	$R_9 R_3, R_2 R_3 R_2 R_9 R_2$
⋮	⋮	⋮	⋮	⋮	⋮

**Table SI.5.** As table SI.2 but for \*23(10).

Number	Orbifold symbol	Index	$\chi$	$ c $	Generators
1	*23(10)	1	-1/30	1	$R_2, R_3, R_{10}$
2	*335	2	-1/15	1	$R_2, R_{10}, R_3 R_2 R_3$
3	3*5	"	"	1	$R_3, R_{10} R_2$
4	23(10)	"	"	1	$R_3 R_2, R_{10} R_2$
5	*25(10)	3	-1/10	3	$R_2, R_3,$ $R_{10} R_2 R_3 R_2 R_{10}$
6	335	4	-2/15	1	$R_{10} R_2, R_3 R_2 R_3 R_2$
7	3*22	5	-1/6	5	$R_2, R_3 R_{10} R_2 R_3,$ $R_{10} R_2 R_3 R_2 R_{10}$
:	:	:	:	:	:

**Table SI.6.** As table SI.2 but for \*23(12).

Number	Orbifold symbol	Index	$\chi$	$ c $	Generators
1	*23(12)	1	-1/24	1	$R_2, R_3, R_{12}$
2	*336	2	-1/12	1	$R_2, R_{12}, R_3 R_2 R_3$
3	3*6	"	"	1	$R_3, R_{12} R_2$
4	23(12)	"	"	1	$R_3 R_2, R_{12} R_2$
5	*26(12)	3	-1/8	3	$R_2, R_3,$ $R_{12} R_2 R_3 R_2 R_{12}$
6	2*24	"	"	3	$R_2, R_{12} R_3,$ $R_3 R_2 R_3 R_2 R_3$
7	*34(12)	4	-1/6	4	$R_2, R_3,$ $R_{12} R_2 R_3 R_2 R_3 R_2 R_{12}$
8	2*33	"	"	4	$R_2, R_{12},$ $R_3 R_2 R_{12} R_3 R_2 R_3$
9	336	"	"	1	$R_{12} R_2, R_3 R_2 R_3 R_2$
:	:	:	:	:	:

**Table SI.7.** Structural data for minimally frustrated  $N$ -coordinated dense disc packs in  $\mathbb{H}^2$  embedded in  $\mathbb{E}^3$ . Disc radii are scaled to TPMS of unit average Gaussian curvature ( $\bar{K} = \frac{2\pi\chi_{vol}}{A_{vol}} = -1$ ), which implies conventional unit cell edges of 3.2738, 2.5591, 4.0326 for the  $P$ ,  $D$  and  $Gyroid$  TPMS respectively (since  $\chi_{\text{Unit cell}} = -4, -2$ , or  $-8$  respectively) (17). Since all of the packings adopt hyperbolic orbifolds that map on to the  $P$ ,  $D$  and  $Gyroid$  TPMS, they embed in three-space on all three TPMS.

$N$	Coordination in $\mathbb{E}^3$	Orbifold	Disc centre orbifold	Disc radius	$P$	$D$	$Gyroid$
7	4	2*23	*2	$\frac{1}{2} \operatorname{arccosh} \sqrt{2}$	$I432$	$Fd\bar{3}m$	$I4_132$
8	4	*246	*4	$\operatorname{arccosh} \sqrt{\frac{3}{2}}$	$Im\bar{3}m$	$Pn\bar{3}m$	$Ia\bar{3}d$
9	6	*246	*6	$\operatorname{arccosh} \sqrt{2}$	$Im\bar{3}m$	$Pn\bar{3}m$	$Ia\bar{3}d$
10	8	*344	*4	$2 \operatorname{arccosh} \sqrt{\frac{3}{2}}$	$Pm\bar{3}n$	$P\bar{4}3m$	$I\bar{4}3d$
12	8	*266	*6	$\operatorname{arccosh} \sqrt{3}$	$Fd\bar{3}m$	$Pn\bar{3}m$	$Ia\bar{3}$

**Table SI.8.** Embeddings of [3, 7]-patterns constructed using the specified motif, and symmetrised by the equilibrium placement algorithm (18), using the Systre algorithm (19). We list the (Vertex transitivity, edge transitivity) as well as the crystallographic space group. If the net can be found in RCSR (20), the corresponding RCSR-symbol is shown in bold; e.g. **svn-x**. In patterns denoted “Good”, the shortest distance between non-bonded nodes is larger than the longest bond in the structure. In patterns denoted “Equal edges”, the length of the edges in the structure are uniform within a 15% margin. Patterns marked with an asterisk ( $\downarrow z'$ ) have edge collisions (and are multigraphs). Accordingly, their edge-net has degree  $z'$  less than the number of faces per vertex.

Motif	Orbifold symbol	D	G <sub>1</sub>	G <sub>2</sub>	P
(5)	2223 <sub>01</sub>	(1,5) <i>F</i> <sub>4</sub> 132 Good	(1,5) <i>I</i> <sub>4</sub> 132 Good	(1,5) <i>I</i> <sub>4</sub> 132 Good	(1,5) <i>P</i> <sub>432</sub> Good, equal edges <b>svn-x*</b>
(5)	2223 <sub>11</sub>	(1,5) <i>F</i> <sub>4</sub> 132	(1,5) <i>I</i> <sub>4</sub> 132	(1,5) <i>I</i> <sub>4</sub> 132	(1,5) <i>P</i> <sub>432</sub>
(5)	2223 <sub>12</sub>	(1,5) <i>F</i> <sub>4</sub> 132 Equal edges	(1,5) <i>I</i> <sub>4</sub> 132	(1,5) <i>I</i> <sub>4</sub> 132	(1,5) <i>P</i> <sub>432</sub>
(5)	2223 <sub>13</sub>	(1,5) <i>F</i> <sub>4</sub> 132 -	(1,5), $\downarrow$ (6) <i>I</i> <sub>4</sub> 132 Good, equal edges	(1,5) <i>I</i> <sub>4</sub> 132	(1,5) <i>P</i> <sub>432</sub>
(5)	2223 <sub>14</sub>	(1,5) <i>F</i> <sub>4</sub> 132	(1,5) <i>I</i> <sub>4</sub> 132	(1,5) <i>I</i> <sub>4</sub> 132	(1,5) <i>P</i> <sub>432</sub>
(5)	2223 <sub>21</sub>	(1,5) <i>F</i> <sub>4</sub> 132 Equal edges	(1,5) <i>I</i> <sub>4</sub> 132 Equal edges	(1,5) <i>I</i> <sub>4</sub> 132	(1,5) <i>P</i> <sub>432</sub>
(5)	2223 <sub>23</sub>	(1,5) <i>F</i> <sub>4</sub> 132 As D via 2223 <sub>21</sub>	(1,5) <i>I</i> <sub>4</sub> 132 Equal edges	(1,5) <i>I</i> <sub>4</sub> 132 Equal edges	(1,5) <i>P</i> <sub>432</sub>
(5)	2223 <sub>31</sub>	(1,5) <i>F</i> <sub>4</sub> 132 Equal edges	(1,5) <i>I</i> <sub>4</sub> 132 Equal edges	(1,5) <i>I</i> <sub>4</sub> 132 Good	(1,5) <i>P</i> <sub>432</sub>
(5)	2223 <sub>32</sub>	(1,5) <i>F</i> <sub>4</sub> 132 -	(1,5) <i>I</i> <sub>4</sub> 132 -	(1,5), $\downarrow$ (6) <i>I</i> <sub>4</sub> 132 Good, equal edges	(1,5) <i>P</i> <sub>432</sub>
(5)	2223 <sub>41</sub>	(1,5) <i>F</i> <sub>4</sub> 132 Equal edges <b>svu</b>	(1,5) <i>I</i> <sub>4</sub> 132 Equal edges	(1,5) <i>I</i> <sub>4</sub> 132 Good	(1,5) <i>P</i> <sub>432</sub> Good, equal edges
(7)	23 $\times$ <sub>7</sub>	(1,4) <i>F</i> <sub>d</sub> 3 Good, equal edges <b>svm</b>	(2,8) <i>I</i> <sub>2</sub> 13 -	(2,8) <i>I</i> <sub>2</sub> 13 As G <sub>1</sub> via 23 $\times$ <sub>7</sub>	(1,4) <i>I</i> <sub>2</sub> 3 -
(8)	23 $\times$ <sub>8</sub>	(1,4) <i>F</i> <sub>d</sub> $\bar{3}$ Good, equal edges	(2,8) <i>I</i> <sub>2</sub> 13 Good, equal edges	(2,8) <i>I</i> <sub>2</sub> 13 Good, equal edges	(1,4) <i>I</i> <sub>2</sub> 3 Good, equal edges

**Table SI.9.** As table SI.8, but for [3, 8].

Motif	Orbifold symbol	D	G <sub>1</sub>	G <sub>2</sub>	P
(6)	2*23	<b>pyc</b> (1,2) <i>Fd3m</i>	<b>teo</b> (1,3) <i>I4_132</i>	<b>teo</b> (1,3) <i>I4_132</i>	- (1,2) <i>I432</i>
		Good, equal edges	-	-	-
(9)	*2224	<b>tej</b> (2,3) <i>P42/nmm</i>	<b>tie</b> (2,4) <i>I4_1/acd</i>	<b>tie</b> (2,4) <i>I4_1/acd</i>	<b>dgp</b> (2,3) <i>I4/mmm</i>
		Good, equal edges	-	-	Equal edges
(15)	*2323	<b>pyc</b> (1,2) <i>Fd\bar{3}m</i>	<b>teo</b> (1,3) <i>I4_132</i>	<b>teo</b> (1,3) <i>I4_132</i>	- (1,2) <i>I432</i>
		Good, equal edges	-	-	-
(18)	2223 <sub>01</sub>	<b>dqg</b> (1,3) <i>F4_132</i>	-	<b>tes</b> (1,3) <i>I4_132</i>	<b>dgo</b> (1,3) <i>P432</i>
		Good, equal edges	Good	Equal edges	- As P via 2*23
(18)	2223 <sub>11</sub>	<b>pyc</b> (1,2) <i>Fd\bar{3}m</i>	<b>teo</b> (1,3) <i>I4_132</i>	<b>teo</b> (1,3) <i>I4_132</i>	- (1,2) <i>I432</i>
		Good, equal edges	-	-	-
(18)	2223 <sub>12</sub>	- (1,3) <i>F4_132</i>	<b>lcv-e</b> (1,3), ↓ (6) <i>I4_132</i>	-	- (1,3) <i>P432</i>
		Good, equal edges	-	-	-
(18)	2223 <sub>13</sub>	- (1,3) <i>F4_132</i>	- (1,3), ↓ (7) <i>I4_132</i>	- (1,3) <i>I4_132</i>	- (1,3) <i>P432</i>
		-	As G <sub>1</sub> via 2223 <sub>01</sub>	-	<b>dgo</b>
(18)	2223 <sub>14</sub>	- (1,3) <i>F4_132</i>	- (1,3) <i>I4_132</i>	- (1,3) <i>I4_132</i>	- (1,3) <i>P432</i>
		Good	-	-	-
(18)	2223 <sub>21</sub>	- As D via 2223 <sub>12</sub> (1,3) <i>F4_132</i>	- As G <sub>2</sub> via 2223 <sub>12</sub> (1,3) <i>I4_132</i>	<b>lcv-e</b> (1,3), ↓ (6) <i>I4_132</i>	- As P via 2223 <sub>12</sub> (1,3) <i>P432</i>
		-	-	Good, equal edges	-
(18)	2223 <sub>23</sub>	- As D via 2223 <sub>13</sub> (1,3) <i>F4_132</i>	- As G <sub>2</sub> via 2223 <sub>13</sub> (1,3) <i>I4_132</i>	- (1,3), ↓ (7) <i>I4_132</i>	- (1,3) <i>P432</i>
		Good, equal edges	-	-	-
(18)	2223 <sub>31</sub>	- As D via 2223 <sub>13</sub> (1,3) <i>F4_132</i>	- As G <sub>2</sub> via 2223 <sub>13</sub> (1,3) <i>I4_132</i>	- (1,3), ↓ (7) <i>I4_132</i>	- (1,3) <i>P432</i>
		-	-	As G <sub>1</sub> via 2223 <sub>13</sub>	- As P via 2223 <sub>13</sub>
(18)	2223 <sub>32</sub>	- As D via 2223 <sub>23</sub> (1,3) <i>F4_132</i>	- As G <sub>2</sub> via 2223 <sub>23</sub> (1,3) <i>I4_132</i>	- (1,3), ↓ (7) <i>I4_132</i>	- (1,3) <i>P432</i>
		Good, equal edges	-	As G <sub>1</sub> via 2223 <sub>23</sub>	- As P via 2223 <sub>23</sub>
(18)	2223 <sub>41</sub>	- As D via 2223 <sub>14</sub> (1,3) <i>F4_132</i>	- As G <sub>2</sub> via 2223 <sub>14</sub> (1,3) <i>I4_132</i>	- (1,3) <i>I4_132</i>	<b>dgo</b> (1,3) <i>P432</i>
		Good	-	As G <sub>1</sub> via 2223 <sub>01</sub>	-
(19)	23×	<b>pyc</b> (1,2) <i>Fd3m</i>	<b>teo</b> (1,3) <i>I4_132</i>	<b>teo</b> (1,3) <i>I4_132</i>	As P via 2*23 (1,2) <i>I432</i>
		Good, equal edges	-	-	-

**Table SI.10.** As table SI.8, but for [3, 9].

Motif	Orbifold symbol	D	G <sub>1</sub>	G <sub>2</sub>	P
(3)	2*23	<b>uty</b>	<b>utz</b>	<b>utz</b>	<b>utx</b>
		(1,2)	(1,3)	(1,3)	(1,2)
		<i>Fd\bar{3}m</i>	<i>I4_132</i>	<i>I4_132</i>	<i>I432</i>
		Good, equal edges	Equal edges	Equal edges	Good
(5)	*2323	<b>uty</b>	<b>utz</b>	<b>utz</b>	<b>utx</b>
		(1,2)	(1,3)	(1,3)	(1,2)
		<i>Fd\bar{3}m</i>	<i>I4_132</i>	<i>I4_132</i>	<i>I432</i>
		Good, equal edges	Equal edges	Equal edges	Good
(6)	2223 <sub>01</sub>	<b>uty</b>	<b>utz</b>	<b>utz</b>	<b>utx</b>
		(1,2)	(1,3)	(1,3)	(1,2)
		<i>Fd\bar{3}m</i>	<i>I4_132</i>	<i>I4_132</i>	<i>I432</i>
		Good, equal edges	Equal edges	Equal edges	Good
(6)	2223 <sub>11</sub>	-	-	-	-
		(1,3)	(1,3)	Vertex collision	(1,3)
		<i>F4_132</i>	<i>I4_132</i>		<i>P432</i>
		-	-	-	-
(6)	2223 <sub>21</sub>	-	-	-	As P via 2223 <sub>11</sub>
		(1,3)	(1,3)	Vertex collision	(1,3)
		<i>F4_132</i>	<i>I4_132</i>		<i>P432</i>
		-	-	<b>utz</b>	<b>utx</b>
(6)	2223 <sub>31</sub>	-	-	-	-
		(1,3)	(1,3)	(1,3)	(1,2)
		<i>F4_132</i>	<i>I4_132</i>	<i>I4_132</i>	<i>I432</i>
		-	-	Equal edges	Good
(6)	2223 <sub>41</sub>	As D via 2223 <sub>31</sub>	As G <sub>1</sub> via 2223 <sub>31</sub>	<b>utz</b>	<b>utx</b>
		(1,3)	(1,3)	(1,3)	(1,2)
		<i>F4_132</i>	<i>I4_132</i>	<i>I4_132</i>	<i>I432</i>
		-	-	Equal edges	Good
(7)	23×	<b>uty</b>	<b>utz</b>	<b>utz</b>	<b>utx</b>
		(1,2)	(1,3)	(1,3)	(1,2)
		<i>Fd\bar{3}m</i>	<i>I4_132</i>	<i>I4_132</i>	<i>I432</i>
		Good, equal edges	Equal edges	Equal edges	Good

**Table SI.11.** As table SI.8, but for [3, 10].

Motif	Orbifold symbol	D	G <sub>1</sub>	G <sub>2</sub>	P
(7)	3*22	-	-	As G <sub>1</sub> via 3*22	-
		(1,2)	(1,3)	(1,3)	(1,2), ↓ (9)
		<i>Pm\bar{3}</i>	<i>I2_13</i>	<i>I2_13</i>	<i>Pm\bar{3}</i>
		Good	Good, equal edges	Good, equal edges	Equal edges

**Table SI.12.** As table SI.8, but for [3, 12].

Motif	Orbifold symbol	D	G <sub>1</sub>	G <sub>2</sub>	P
(8)	2*33	-	-	As G <sub>1</sub> via 2*33	-
		(1,2)	(1,3)	(1,3)	(1,2), ↓ (9)
		<i>F4_132</i>	<i>I2_13</i>	<i>I2_13</i>	<i>P\bar{4}3m</i>
		Good	Good	Good	Good, equal edges

## SI.4. SI Datasets - Embeddings, Systre-keys, and Delaney-Dress-symbols - P-, D-, and G-surfaces.

**SI.4.1.** [3, 7] on 2223<sub>01</sub>.

### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(4.61197, 4.61197, 4.61197)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.03479, 0.30483, 0.17318)
Coordinates, edge 1	(0.03479, 0.30483, 0.17318) ↔ (0.19517, 0.32682, 0.03479)
Coordinates, edge 2	(0.03479, 0.30483, 0.17318) ↔ (0.03479, 0.19517, 0.32682)
Coordinates, edge 3	(0.03479, 0.30483, 0.17318) ↔ (-0.05483, 0.21521, 0.07682)
Coordinates, edge 4	(0.03479, 0.30483, 0.17318) ↔ (-0.07682, 0.44517, 0.28479)
Coordinates, edge 5	(0.03479, 0.30483, 0.17318) ↔ (0.05483, 0.21521, -0.07682)
Shortest edge length	0.73430
Average edge length	1.00000
Longest edge length	1.22832
Shortest non-bonded distance	1.27746
Smallest angle between edges, degrees	36.12547
Average angle between edges, degrees	100.82446
Largest angle between edges, degrees	151.77613

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
 1 2 0 0 0 3 5 0 0 0 3 9 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 6 0 0 0 4 1 2 0 0 0 4 1 4 1 0 0 4 1 6 0 0 0 4 1 7 0 0 0 5 8 0 0 0 5 1 0 0 1 0 5 1 4 0 0 0 5  
 1 8 0 0 0 5 1 9 0 0 0 6 7 0 0 0 6 9 1 1 0 6 1 3 1 1 0 6 1 7 0 0 0 6 2 0 0 0 0 7 8 0 0 0 7 1 3 1 1 0 7 1 9 0 0 1 7 2 1 0 0 0 7 2 2 0 0 0 8 1 0 0 1 0 8 1 1 0 1 0 8  
 1 6 -1 1 1 8 2 2 0 0 0 9 1 0 0 0 9 1 3 0 0 0 9 2 0 -1 -1 0 9 2 1 0 -1 -1 1 0 1 0 0 1 0 1 9 0 -1 0 1 0 2 1 0 -1 -1 1 1 1 2 0 0 0 1 1 1 6 -1 0 1 1 1 8 0 0 1 1 1  
 2 3 0 0 0 1 2 1 4 1 0 0 1 2 1 5 1 0 0 1 2 2 0 0 0 1 1 2 2 3 0 0 0 1 3 1 5 0 0 0 1 3 1 9 -1 -1 1 1 3 2 4 0 0 0 1 4 1 5 0 0 0 1 4 1 6 -1 0 0 1 4 1 8 0 0 0 1 5 1 7 -1 0 1  
 1 5 2 0 -1 0 1 1 5 2 4 0 0 0 1 6 1 7 0 0 0 1 6 1 8 1 0 0 1 6 2 2 1 -1 -1 1 7 2 0 0 0 1 7 2 2 1 -1 -1 1 7 2 4 1 0 -1 1 8 1 9 0 0 0 1 8 2 3 0 0 -1 1 8 2 4 1 1 -1 1 9 2 1  
 0 0 -1 1 9 2 4 1 1 -1 2 0 2 1 1 0 -1 2 0 2 3 0 0 -1 2 1 2 2 0 0 0 2 1 2 3 -1 0 0 2 2 2 3 -1 0 0 2 2 2 4 0 1 0 2 3 2 4 1 1 0

### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(3.76609, 3.76609, 3.76609)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.10434, 0.24577, 0.30786)
Coordinates, edge 1	(0.10434, 0.24577, 0.30786) ↔ (0.24577, 0.30786, 0.10434)
Coordinates, edge 2	(0.10434, 0.24577, 0.30786) ↔ (-0.10434, 0.25423, 0.30786)
Coordinates, edge 3	(0.10434, 0.24577, 0.30786) ↔ (0.05786, 0.50423, 0.35434)
Coordinates, edge 4	(0.10434, 0.24577, 0.30786) ↔ (0.14566, 0.05786, 0.49577)
Coordinates, edge 5	(0.10434, 0.24577, 0.30786) ↔ (0.05786, 0.49577, 0.14566)
Shortest edge length	0.78658
Average edge length	1.00000
Longest edge length	1.13590
Shortest non-bonded distance	1.25451
Smallest angle between edges, degrees	42.57219
Average angle between edges, degrees	100.90766
Largest angle between edges, degrees	168.11929

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
 1 2 0 0 0 3 5 0 0 0 3 1 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 6 0 0 0 4 1 2 0 0 0 4 1 4 1 0 0 4 1 6 0 0 0 4 1 7 0 0 0 5 8 0 0 0 5 9 0 1 0 5 1 4 0 0 0 5  
 1 8 0 0 0 5 1 9 0 0 0 6 7 0 0 0 6 1 0 0 0 1 6 1 3 0 0 1 6 1 6 0 0 0 6 2 0 0 0 0 7 8 0 0 0 7 1 3 0 0 1 7 1 9 1 0 0 7 2 1 0 0 0 7 2 2 0 0 0 8 9 0 1 0 8 1 1 0 1 0 8  
 1 7 0 1 -1 8 2 1 0 0 0 9 1 0 0 0 9 1 1 0 0 0 9 1 9 0 -1 0 9 2 2 -1 -1 0 1 0 1 3 0 0 0 1 0 2 0 0 0 -1 1 0 2 2 -1 -1 0 1 1 1 2 0 0 0 1 1 1 7 0 0 -1 1 1 1 8 1 0 -1 1  
 2 3 0 0 0 1 2 1 4 1 0 0 1 2 1 5 1 0 0 1 2 2 0 1 1 -1 1 2 2 3 0 0 0 1 3 1 5 0 0 0 1 3 1 9 1 0 -1 1 1 3 2 4 0 0 0 1 4 1 5 0 0 0 1 4 1 7 -1 0 0 1 4 1 8 0 0 0 1 5 1 6 0 1 -1  
 1 5 2 0 0 1 -1 1 5 2 4 0 0 0 1 6 1 7 0 0 0 1 6 2 0 0 0 1 6 2 1 0 -1 1 1 6 2 4 0 -1 1 1 7 1 8 1 0 0 1 7 2 1 0 -1 1 1 8 1 9 0 0 0 1 8 2 3 0 0 -1 1 8 2 4 -1 0 1 1 9 2 2 -1  
 0 0 1 9 2 4 -1 0 1 2 0 2 2 -1 -1 1 2 1 2 2 0 0 0 2 1 2 3 0 0 0 2 1 2 4 0 0 0 2 2 2 3 0 0 0 2 3 2 4 0 0 0

### Gyroid2 - Information

Space group	<i>I4_132</i>
Unit cell lattice	(3.6818, 3.6818, 3.6818)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.00683, 0.10722, 0.38305)
Coordinates, edge 1	(0.00683, 0.10722, 0.38305) ↔ (0.11695, -0.00683, 0.60722)
Coordinates, edge 2	(0.00683, 0.10722, 0.38305) ↔ (-0.00683, 0.39278, 0.38305)
Coordinates, edge 3	(0.00683, 0.10722, 0.38305) ↔ (-0.13305, 0.14278, 0.24317)
Coordinates, edge 4	(0.00683, 0.10722, 0.38305) ↔ (0.24317, 0.13305, 0.35722)
Coordinates, edge 5	(0.00683, 0.10722, 0.38305) ↔ (0.13305, 0.35722, 0.24317)
Shortest edge length	0.73997
Average edge length	1.00000
Longest edge length	1.15256
Shortest non-bonded distance	1.25824
Smallest angle between edges, degrees	38.88139
Average angle between edges, degrees	101.81996
Largest angle between edges, degrees	177.10234

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 5 0 0 0 3 9 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 8 0 0 0 4 12 0 0 0 4 16 0 0 0 4 17 0 0 0 4 18 0 0 0 5 6 0 0 0 5 10 0 1 0 5 14 0 0 0 5  
16 1 0 0 5 19 0 0 0 6 7 0 0 0 6 16 1 0 0 6 17 1 0 0 6 20 0 0 0 6 21 0 0 0 7 8 0 0 0 7 12 1 0 1 7 15 0 0 1 7 20 0 0 0 7 22 0 0 0 8 9 0 1 1 8 13 0 1 1 8  
17 0 0 0 8 22 0 0 0 9 10 0 0 0 9 13 0 0 0 9 17 0 -1 1 9 19 0 -1 0 10 11 0 0 0 10 16 1 -1 0 10 19 0 -1 0 10 23 0 0 0 11 12 0 0 0 11 13 -1 0 0 11 15  
-1 0 0 11 23 0 0 0 11 24 0 0 0 12 15 -1 0 0 12 18 0 0 0 12 22 -1 0 -1 13 15 0 0 0 13 22 0 -1 -1 13 24 1 0 0 14 15 0 0 0 14 19 0 0 0 14 20 0 0 -1  
14 23 0 0 -1 14 24 0 0 -1 15 20 0 0 -1 16 17 0 0 0 16 18 0 0 0 16 23 -1 1 0 17 19 0 0 1 17 21 -1 0 0 18 20 -1 1 0 18 21 -1 1 0 18 22 -1 0 -1 18 23  
-1 1 0 19 21 -1 0 -1 19 24 0 0 -1 20 21 0 0 0 20 23 0 0 0 21 22 0 -1 -1 21 24 1 0 0 22 24 1 1 1 23 24 0 0 0

#### Primitive - Information

RCSR-ID	<b>snv-x</b>
Space group	<i>P432</i>
Unit cell lattice	(3.12212, 3.12212, 3.12212)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.10142, 0.36552, 0.20258)
Coordinates, edge 1	(0.10142, 0.36552, 0.20258) ↔ (0.20258, 0.10142, 0.36552)
Coordinates, edge 2	(0.10142, 0.36552, 0.20258) ↔ (-0.10142, 0.63448, 0.20258)
Coordinates, edge 3	(0.10142, 0.36552, 0.20258) ↔ (0.20258, 0.63448, 0.10142)
Coordinates, edge 4	(0.10142, 0.36552, 0.20258) ↔ (-0.10142, 0.20258, 0.36552)
Coordinates, edge 5	(0.10142, 0.36552, 0.20258) ↔ (0.20258, 0.36552, -0.10142)
Shortest edge length	0.95112
Average edge length	1.00000
Longest edge length	1.05177
Shortest non-bonded distance	1.41463
Smallest angle between edges, degrees	55.15659
Average angle between edges, degrees	100.00989
Largest angle between edges, degrees	152.34957

**Primitive - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 4 0 0 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 6 0 0 0 3 7 0 0 0 3 11 1 0 0 3 12 1 0 0 3 13 0 0 0 3 14 0 0 0 4 7 0 0 0 4 11 0 0 0 4 15 0 0 0 4 16 0 0 0 4 17 0 0 0 5 8 0 0 0 5 9 0 0 0 5  
15 0 1 0 5 18 0 0 0 5 19 0 0 0 6 8 0 0 0 6 12 1 0 0 6 19 1 0 0 6 20 0 0 0 6 21 0 0 0 7 9 0 0 1 7 14 0 0 0 7 17 0 0 0 7 22 0 0 0 8 15 0 1 0 8 16 0 1 0  
8 21 0 0 0 8 22 0 0 0 9 10 0 0 0 9 17 0 0 -1 1 9 18 0 0 0 9 22 0 0 -1 1 0 12 0 0 0 10 13 -1 0 -1 10 14 -1 0 -1 10 17 0 0 -1 1 0 23 0 0 0 11 12 0 0 0 11  
13 -1 0 0 11 15 0 0 0 11 20 -1 -1 0 12 19 0 0 0 12 23 0 0 0 13 14 0 0 0 13 17 1 0 0 13 20 0 -1 0 13 24 0 0 0 14 21 0 0 0 14 22 0 0 0 14 23 1 0 1  
15 16 0 0 0 15 19 0 -1 0 15 20 -1 -1 0 16 17 0 0 0 16 18 0 -1 1 16 22 0 -1 0 16 24 -1 0 0 17 24 -1 0 0 18 19 0 0 0 18 22 0 0 -1 18 23 0 0 0 18 24  
-1 1 -1 19 20 -1 0 0 19 23 0 0 0 20 21 0 0 0 20 24 0 1 0 21 22 0 0 0 21 23 1 0 1 21 24 0 1 0 23 24 -1 1 -1

**Delauney-Dress-symbol** <1.1:336:234 233 98 97 322 321 42 41 44 43 116 115 174 173 264 263 138 137 328 327 156 155 74 73 62 61 248  
247 320 319 148 147 66 65 84 83 186 185 46 45 184 183 200 199 304 303 282 281 118 117 220 219 250 249 72 71 146 145 290 289 168 167  
238 237 170 169 188 187 232 231 256 255 272 271 308 307 210 209 310 309 204 203 194 193 212 211 128 127 260 259 228 227 164 163 176  
175 294 293 142 141 278 277 242 241 224 223 286 285 300 299 330 329 262 261 292 291 318 317 336 335 280 279 326 325 314 313 206 205  
226 225 236 235 240 239 216 215 190 189 214 213 202 201 306 305 312 311 252 251 288 287 258 257 276 275 266 265 274 273 334 333 296  
295 302 301 332 331 324 323,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63 65 67 69 84 73 75  
77 79 81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137 139 154 143 145 147  
149 151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203 205 207 209 224 213  
215 217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269 271 273 275 277 279  
294 283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333 335,2 4 6 8 10 12 14 16  
18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104  
106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164 166 168 170  
172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224 226 228 230 232 234 236  
238 240 242 244 246 248 250 252 254 256 258 260 262 264 266 268 270 272 274 276 280 282 284 286 288 290 292 294 296 298 300 302



**SI.4.2.** [3, 7] on 2223<sub>11</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(3.09028, 3.09028, 3.09028)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.10718, 0.13088, 0.31153)
Coordinates, edge 1	(0.10718, 0.13088, 0.31153) ↔ (0.11912, 0.14282, -0.06153)
Coordinates, edge 2	(0.10718, 0.13088, 0.31153) ↔ (0.36912, 0.18847, 0.10718)
Coordinates, edge 3	(0.10718, 0.13088, 0.31153) ↔ (0.10718, 0.36912, 0.18847)
Coordinates, edge 4	(0.10718, 0.13088, 0.31153) ↔ (0.14282, -0.06153, 0.11912)
Coordinates, edge 5	(0.10718, 0.13088, 0.31153) ↔ (0.11912, 0.35718, 0.56153)
Shortest edge length	0.82861
Average edge length	1.00000
Longest edge length	1.15401
Shortest non-bonded distance	0.31645
Smallest angle between edges, degrees	43.95739
Average angle between edges, degrees	84.97394
Largest angle between edges, degrees	170.09705

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
1 2 0 0 0 3 7 0 0 0 3 9 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 6 0 0 0 4 8 0 0 0 4 1 0 0 1 0 4 1 5 1 0 0 4 1 6 0 0 0 4 1 7 0 0 0 5 8 0 0 0 5 1 1 0 0 0 5  
1 3 0 0 1 5 1 8 0 0 0 5 1 9 0 0 0 6 7 0 0 0 6 1 1 0 1 -1 6 1 6 0 0 0 6 1 8 0 1 -1 6 2 0 0 0 7 1 4 0 0 0 7 2 0 0 0 7 2 1 0 0 0 7 2 2 0 0 0 8 1 0 0 1 0 8 1 9 0  
0 0 8 2 1 0 1 0 8 2 3 0 0 0 9 1 0 0 0 9 1 3 0 0 0 9 1 7 0 -1 0 9 2 0 1 -1 -1 9 2 2 1 -1 -1 1 0 1 2 0 0 0 1 0 1 7 0 -1 0 1 0 2 3 0 -1 0 1 1 1 2 0 0 0 1 1 1 8 0 0 0  
1 1 2 0 0 -1 1 1 1 2 4 0 0 0 1 2 1 4 0 0 1 1 2 1 6 -1 0 1 1 2 2 3 0 -1 0 1 2 2 4 0 0 0 1 3 1 5 0 0 0 1 3 1 8 0 0 -1 1 3 1 9 0 0 -1 1 3 2 2 1 -1 -1 1 4 1 5 0 0 0 1 4 1 6  
-1 0 0 1 4 2 1 0 0 0 1 4 2 4 0 0 -1 1 5 1 6 -1 0 0 1 5 1 7 -1 0 0 1 5 1 9 0 0 -1 1 6 1 8 0 1 -1 1 6 2 3 1 -1 -1 1 7 1 9 1 0 -1 1 7 2 0 1 0 -1 1 7 2 4 1 1 -2 1 8 2 2 1 -1  
0 1 8 2 3 1 -2 0 1 9 2 1 0 1 0 1 9 2 4 0 1 -1 2 0 2 2 0 0 0 2 0 2 4 0 1 -1 2 1 2 2 0 0 0 2 1 2 3 0 -1 0 2 1 2 4 0 0 -1 2 2 2 3 0 -1 0

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.10211, 2.10211, 2.10211)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.02362, 0.18887, 0.42751)
Coordinates, edge 1	(0.02362, 0.18887, 0.42751) ↔ (0.06113, 0.22638, 0.82249)
Coordinates, edge 2	(0.02362, 0.18887, 0.42751) ↔ (0.31113, 0.57249, 0.52362)
Coordinates, edge 3	(0.02362, 0.18887, 0.42751) ↔ (0.47638, 0.18887, 0.57249)
Coordinates, edge 4	(0.02362, 0.18887, 0.42751) ↔ (-0.32249, 0.06113, 0.77362)
Coordinates, edge 5	(0.02362, 0.18887, 0.42751) ↔ (0.43887, 0.22638, 0.17751)
Shortest edge length	0.83775
Average edge length	1.00000
Longest edge length	1.06339
Shortest non-bonded distance	0.27551
Smallest angle between edges, degrees	35.46644
Average angle between edges, degrees	83.47173
Largest angle between edges, degrees	162.88867

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
1 2 0 0 0 3 8 0 0 0 3 9 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 7 0 0 0 4 1 1 0 0 0 4 1 5 1 0 0 4 1 6 0 0 0 4 1 7 0 0 0 5 6 0 0 0 5 8 0 0 0 5 1 1 0 1 0 5  
1 2 0 1 0 5 1 8 0 0 0 5 1 9 0 0 0 6 1 3 0 0 1 6 1 8 0 0 0 6 2 0 0 0 6 2 1 0 0 0 7 1 0 -1 0 1 7 1 7 0 0 0 7 2 1 0 0 0 7 2 2 0 0 0 8 1 5 0 0 0 8 1 9 0 0  
0 8 2 2 -1 -1 0 8 2 3 0 0 0 9 1 0 0 0 9 1 3 0 0 0 9 1 2 2 1 0 -1 9 2 3 2 1 -1 9 2 4 0 0 0 1 0 1 2 0 0 0 1 0 1 7 1 0 -1 1 0 2 0 -1 -1 0 1 0 2 2 1 0 -1 1 1 1 2 0 0 0  
1 1 1 6 0 0 0 1 1 1 8 0 -1 1 0 1 1 2 4 1 -1 0 1 2 1 4 1 -1 1 1 1 2 1 9 0 -1 0 1 2 2 0 -1 -1 0 1 3 1 4 0 0 0 1 3 2 0 0 0 -1 1 3 2 1 0 0 -1 1 3 2 4 0 0 0 1 4 1 5 0 0 0 1 4 1 6  
-1 0 0 1 4 1 9 1 0 -1 1 4 2 0 0 -1 1 5 1 6 -1 0 0 1 5 1 7 -1 0 0 1 5 1 9 2 0 -1 1 6 2 1 1 -1 -1 1 6 2 4 1 -1 0 1 7 1 8 -2 -1 1 1 7 2 0 -2 -1 1 1 7 2 3 1  
0 0 1 8 2 0 0 0 1 8 2 3 3 1 -1 1 8 2 4 1 0 0 1 9 2 1 -1 -1 0 1 9 2 2 -1 -1 0 2 1 2 2 0 0 0 2 1 2 4 0 0 1 2 2 2 3 1 1 0 2 3 2 4 -2 -1 1

#### Gyroid2 - Information

Space group	<i>I4_132</i>
Unit cell lattice	(3.97084, 3.97084, 3.97084)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.00726, 0.04633, 0.35233)
Coordinates, edge 1	(0.00726, 0.04633, 0.35233) ↔ (-0.10233, 0.20367, 0.24274)
Coordinates, edge 2	(0.00726, 0.04633, 0.35233) ↔ (0.14767, -0.00726, 0.54633)
Coordinates, edge 3	(0.00726, 0.04633, 0.35233) ↔ (0.00726, -0.04633, 0.14767)
Coordinates, edge 4	(0.00726, 0.04633, 0.35233) ↔ (0.24274, 0.10233, 0.29633)
Coordinates, edge 5	(0.00726, 0.04633, 0.35233) ↔ (0.10233, 0.29633, 0.24274)
Shortest edge length	0.87702
Average edge length	1.00000
Longest edge length	1.14777
Shortest non-bonded distance	1.25347
Smallest angle between edges, degrees	48.97955
Average angle between edges, degrees	98.76216
Largest angle between edges, degrees	166.53433

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 7 0 0 0 3 1 1 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 8 0 0 0 4 1 0 0 0 4 1 3 1 0 0 4 1 6 0 0 0 4 1 7 0 0 0 5 6 0 0 0 5 8 0 0 0 5 1 1 0 1 0 5  
1 4 0 1 0 5 1 8 0 0 0 5 1 9 0 0 0 6 7 0 0 0 6 9 0 0 1 6 1 7 -1 1 0 6 1 8 0 0 0 6 2 0 0 0 7 9 0 0 1 7 1 5 0 0 0 7 2 1 0 0 0 7 2 2 0 0 0 8 1 6 0 0 0 8 1 9 0 0 0  
8 2 1 0 0 0 8 2 3 0 0 0 9 1 0 0 0 9 1 2 0 0 0 9 2 0 0 0 -1 9 2 2 0 0 -1 1 0 1 3 1 0 0 1 0 1 9 0 0 -1 1 0 2 0 0 0 -1 1 0 2 3 0 0 -1 1 1 1 2 0 0 0 1 1 1 4 0 0 0 1 1  
1 9 0 -1 0 1 1 2 4 0 0 0 1 2 1 6 0 0 0 1 2 1 8 1 -1 0 1 2 2 2 0 0 -1 1 2 2 4 0 0 0 1 3 1 4 0 0 0 1 3 1 5 0 0 0 1 3 1 7 -1 0 0 1 3 2 3 -1 0 -1 1 4 1 8 0 -1 0 1 4 2 2 -1 0  
-1 1 4 2 3 -1 0 -1 1 5 1 7 -1 0 0 1 5 2 0 0 -1 0 1 5 2 1 0 0 0 1 5 2 4 0 0 0 1 6 1 7 0 0 0 1 6 1 8 1 -1 0 1 6 2 1 0 0 0 1 6 2 4 0 0 0 1 7 1 8 1 -1 0 1 7 2 0 1 -1 0 1 8  
2 2 -1 1 -1 1 9 2 0 0 0 0 1 9 2 3 0 0 0 1 9 2 4 0 1 0 2 0 2 4 0 1 0 2 1 2 2 0 0 0 2 1 2 3 0 0 0 2 1 2 4 0 0 0 2 2 2 3 0 0 0

#### Primitive - Information

RCSR-ID	<b>snv-x*</b>
Space group	<i>P432</i>
Unit cell lattice	(3.04022, 3.04022, 3.04022)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.12471, 0.38617, 0.3312)
Coordinates, edge 1	(0.12471, 0.38617, 0.3312) ↔ (-0.12471, 0.3312, 0.38617)
Coordinates, edge 2	(0.12471, 0.38617, 0.3312) ↔ (0.3312, 0.12471, 0.38617)
Coordinates, edge 3	(0.12471, 0.38617, 0.3312) ↔ (-0.12471, 0.38617, 0.6688)
Coordinates, edge 4	(0.12471, 0.38617, 0.3312) ↔ (0.3312, 0.61383, 0.12471)
Coordinates, edge 5	(0.12471, 0.38617, 0.3312) ↔ (0.12471, 0.3312, 0.61383)
Shortest edge length	0.79424
Average edge length	1.00000
Longest edge length	1.27609
Shortest non-bonded distance	1.02665
Smallest angle between edges, degrees	37.85973
Average angle between edges, degrees	98.87670
Largest angle between edges, degrees	162.16645

**Primitive - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 6 0 0 0 3 9 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 5 0 0 0 4 1 1 0 0 0 4 1 6 0 0 0 4 1 7 0 0 0 4 1 8 0 0 0 5 7 0 0 0 5 1 4 1 0 0 5 1 8 0 0 0 5  
1 9 0 0 0 5 2 0 0 0 0 6 8 0 0 0 6 1 3 0 0 0 6 1 6 0 1 0 6 1 7 0 1 0 6 2 1 0 0 0 7 8 0 0 0 7 1 2 0 0 0 7 1 9 0 0 0 7 2 1 1 1 0 7 2 2 0 0 0 8 9 0 0 1 8 1 7 0 1 0 8  
2 2 0 0 0 8 2 3 0 0 0 9 1 0 0 0 9 1 5 0 0 0 9 2 2 0 0 -1 9 2 3 0 0 -1 1 0 1 2 0 0 0 1 0 1 3 1 1 0 1 0 1 8 0 1 -1 1 0 2 2 0 0 -1 1 0 2 4 0 0 0 1 1 1 2 0 0 0 1 1 1 5 0  
-1 0 1 1 1 6 0 0 0 1 1 1 9 0 0 0 1 1 2 3 0 -1 -1 1 2 1 3 1 1 0 1 2 1 9 0 0 0 1 2 2 1 1 1 0 1 3 1 4 0 0 0 1 3 2 1 0 0 0 1 3 2 4 -1 -1 0 1 4 1 5 0 0 0 1 4 1 9 -1 0 0 1 4  
2 0 -1 0 0 1 4 2 4 -1 -1 0 1 5 1 6 0 1 0 1 5 2 0 -1 0 0 1 5 2 3 0 0 -1 1 6 1 7 0 0 0 1 6 2 0 -1 -1 0 1 6 2 1 0 -1 0 1 7 1 8 0 0 0 1 7 2 3 0 -1 0 1 7 2 4 0 -1 1 1 8 2 0 0  
0 0 1 8 2 2 0 -1 0 1 8 2 4 0 -1 1 1 9 2 3 0 -1 -1 1 9 2 4 0 -1 0 2 0 2 1 1 0 0 2 0 2 2 0 -1 0 2 1 2 2 -1 -1 0 2 3 2 4 0 0 1

**Delauney-Dress-symbol** <1.1:336:228 227 24 23 208 207 72 71 326 325 34 33 170 169 106 105 292 291 156 155 210 209 226 225 88 87  
222 221 172 171 324 323 300 299 160 159 288 287 284 283 64 63 240 239 234 235 254 253 122 121 212 211 304 303 334 333 242 241 282  
281 102 101 274 273 206 205 278 277 112 111 184 183 130 129 328 327 108 107 238 237 250 249 322 321 144 143 188 187 276 275 294 293  
186 185 166 165 314 313 136 135 214 213 266 265 200 199 330 329 196 195 216 215 312 311 246 245 190 189 320 319 308 307 270 269 260  
259 178 177 290 289 298 297 316 315 198 197 220 219 192 191 258 257 230 229 218 217 264 263 280 279 286 285 256 255 252 251 332 331  
310 309 268 267 306 305 318 317 336 335,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63 65  
67 69 84 73 75 77 79 81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137 139  
154 143 145 147 149 151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203 205  
207 209 224 213 215 217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269 271  
273 275 277 279 294 283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333 335,2 4  
6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98  
100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164  
166 168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224 226 228 230  
232 234 236 238 240 242 244 246 248 250 252 254 256 258 260 262 264 266 268 270 272 274 276 278 280 282 284 286 288 290 292 294 296



**SI.4.3.** [3, 7] on 2223<sub>12</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.66679, 2.66679, 2.66679)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.03691, 0.04011, 0.25594)
Coordinates, edge 1	(0.03691, 0.04011, 0.25594) ↔ (-0.28691, 0.00594, 0.29011)
Coordinates, edge 2	(0.03691, 0.04011, 0.25594) ↔ (-0.04011, 0.25594, -0.03691)
Coordinates, edge 3	(0.03691, 0.04011, 0.25594) ↔ (0.03691, 0.45989, 0.24406)
Coordinates, edge 4	(0.03691, 0.04011, 0.25594) ↔ (-0.24406, -0.03691, 0.45989)
Coordinates, edge 5	(0.03691, 0.04011, 0.25594) ↔ (-0.20989, 0.28691, 0.49406)
Shortest edge length	0.87315
Average edge length	1.00000
Longest edge length	1.12679
Shortest non-bonded distance	0.29074
Smallest angle between edges, degrees	24.93995
Average angle between edges, degrees	72.89892
Largest angle between edges, degrees	114.43764

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 7 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2  
 11 0 0 0 3 5 0 0 0 3 6 0 0 0 3 9 0 0 0 3 11 0 0 0 3 12 0 0 0 4 8 0 0 0 4 10 0 0 0 4 13 0 0 0 4 14 0 0 0 4 15 0 0 0 5 7 0 0 0 5 11 0 0 0 5 14 1 0 0 5  
 16 0 0 0 5 17 0 0 0 6 8 0 0 0 6 12 0 0 0 6 16 0 1 0 6 17 0 1 0 6 18 0 0 0 7 11 0 0 0 7 14 1 0 0 7 15 1 0 0 7 19 0 0 0 8 13 0 0 0 8 14 0 0 0 8 18 0 0  
 0 8 2 0 0 0 0 9 1 0 0 0 0 9 12 0 0 0 9 19 0 0 1 9 21 0 0 0 9 22 0 0 0 10 13 0 0 0 10 19 0 0 1 10 22 0 0 0 10 23 0 0 0 11 17 0 0 0 11 19 0 0 0 11 21  
 0 0 -1 12 17 0 1 0 12 18 0 0 0 12 22 0 0 0 12 24 0 0 0 13 15 0 0 0 13 18 0 0 0 13 20 0 0 0 13 22 0 0 0 14 15 0 0 0 14 16 -1 0 0 14 20 0 0 0 15 19  
 -1 0 0 15 20 0 0 0 15 23 -1 0 -1 16 17 0 0 0 16 18 0 -1 0 16 20 1 0 0 16 24 0 -1 0 17 21 0 0 -1 17 24 0 -1 0 18 22 0 0 0 18 24 0 0 0 19 21 0 0 -1  
 19 23 0 0 -1 20 23 -1 0 -1 20 24 -1 -1 0 21 22 0 0 0 21 23 0 0 0 21 24 0 -1 1 22 23 0 0 0 23 24 0 -1 1

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.1001, 2.1001, 2.1001)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.14084, 0.25006, 0.43867)
Coordinates, edge 1	(0.14084, 0.25006, 0.43867) ↔ (0.0, 0.10916, 0.81133)
Coordinates, edge 2	(0.14084, 0.25006, 0.43867) ↔ (0.06133, -0.14084, 0.75006)
Coordinates, edge 3	(0.14084, 0.25006, 0.43867) ↔ (-0.14084, 0.24994, 0.43867)
Coordinates, edge 4	(0.14084, 0.25006, 0.43867) ↔ (-0.24994, -0.06133, 0.64084)
Coordinates, edge 5	(0.14084, 0.25006, 0.43867) ↔ (-0.39084, 0.31133, 0.49994)
Shortest edge length	0.59157
Average edge length	1.00000
Longest edge length	1.13202
Shortest non-bonded distance	0.19411
Smallest angle between edges, degrees	9.27435
Average angle between edges, degrees	59.05970
Largest angle between edges, degrees	104.30818

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 4 0 0 0 2 6 1 0 0 2 8 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1  
 0 0 0 3 6 0 0 0 3 7 0 0 0 3 12 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 5 0 0 0 4 10 0 0 0 4 16 0 0 0 4 17 0 0 0 4 18 0 0 0 5 6 0 0 0 5 10 -1 0 0 5 13  
 0 0 0 5 14 0 0 0 5 17 0 0 0 6 9 -1 0 0 6 10 -1 0 0 6 12 0 0 0 7 8 0 0 0 7 15 0 0 0 7 17 0 0 0 7 19 0 0 0 7 20 0 0 0 8 11 0 0 0 8 17 0 0 0 8 18 0 0 0 8  
 19 0 1 0 9 11 0 0 0 9 12 1 0 0 9 16 0 0 0 9 21 0 0 0 9 22 0 0 0 10 13 1 0 0 10 16 0 0 0 10 22 0 0 0 11 16 0 0 0 11 19 0 1 0 11 21 0 0 1 11 23 0 0 0  
 12 13 0 0 0 12 15 -1 1 -1 12 21 -1 0 0 12 24 0 0 0 13 14 0 0 0 13 22 -1 0 0 13 24 0 0 0 14 15 0 0 0 14 17 0 0 0 14 20 0 0 0 14 24 1 -1 1 15 19 0 0  
 0 15 21 0 -1 1 15 24 1 -1 1 16 18 0 0 0 16 22 0 0 0 16 23 0 0 0 17 18 0 0 0 17 20 0 0 0 18 19 0 1 0 18 20 0 1 0 18 23 0 0 0 19 20 0 0 0 19 21 0 0  
 -1 1 20 23 0 -1 0 20 24 1 -1 1 21 22 0 0 0 21 23 0 0 -1 22 23 0 0 24 1 0 0 23 24 1 0 1

#### Gyroid2 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.13941, 2.13941, 2.13941)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.04987, 0.2581, 0.37713)
Coordinates, edge 1	(0.04987, 0.2581, 0.37713) ↔ (-0.12713, -0.0081, 0.20013)
Coordinates, edge 2	(0.04987, 0.2581, 0.37713) ↔ (0.12287, -0.04987, 0.7581)
Coordinates, edge 3	(0.04987, 0.2581, 0.37713) ↔ (0.45013, 0.2581, 0.62287)
Coordinates, edge 4	(0.04987, 0.2581, 0.37713) ↔ (0.37713, -0.04987, 0.2419)
Coordinates, edge 5	(0.04987, 0.2581, 0.37713) ↔ (0.0081, 0.29987, -0.12713)
Shortest edge length	0.78175
Average edge length	1.00000
Longest edge length	1.08620
Shortest non-bonded distance	0.21619
Smallest angle between edges, degrees	30.04701
Average angle between edges, degrees	86.04761
Largest angle between edges, degrees	157.53660

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 6 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 8 0 0 0 3 9 1 0 0 3 1 0 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 4 5 0 0 0 4 8 0 0 0 4 1 0 0 1 0 4 1 4 0 1 0 4 1 5 0 0 0 4 1 6 0 0 0 5 7 0 0 0 5 1 0 0 1 0 5  
15 1 -1 0 5 1 7 0 0 0 5 1 8 0 0 0 6 7 0 0 0 6 8 -1 0 0 6 9 0 0 0 6 1 9 0 0 0 6 2 0 0 0 0 7 1 1 0 0 1 7 1 2 0 0 1 7 1 8 0 0 0 7 1 9 0 0 0 8 9 1 0 0 8 1 6 0 0 0  
8 2 0 1 0 0 9 1 2 0 0 0 9 1 3 -1 0 0 9 2 1 0 0 0 1 0 1 1 0 0 0 1 0 1 4 0 0 0 1 0 1 7 0 -1 0 1 1 1 2 0 0 0 1 1 1 7 0 -1 0 1 1 1 8 0 0 -1 1 1 2 2 0 0 0 1 2 1 9 0 0 -1  
12 2 1 0 0 0 1 2 2 1 0 -1 1 3 1 4 0 0 0 1 3 1 6 -4 1 1 1 3 2 0 -3 1 1 1 3 2 1 1 0 0 1 3 2 3 0 0 0 1 4 1 5 0 -1 0 1 4 1 7 -1 0 0 1 4 2 3 0 0 0 1 5 1 6 0 0 0 1 5 1 7 -1  
1 0 1 5 1 8 -1 1 0 1 5 2 4 0 0 0 1 6 2 0 1 0 0 1 6 2 3 4 -1 -1 1 6 2 4 0 0 0 1 7 2 2 0 1 0 1 7 2 3 1 0 0 1 8 1 9 -1 0 1 1 8 2 2 0 0 1 1 8 2 4 1 -1 0 1 9 2 0 0 0 1 9 2 2  
1 0 0 1 9 2 4 2 -1 -1 2 0 2 1 4 -1 -1 2 0 2 4 2 -1 -1 2 1 2 2 1 0 -1 2 1 2 3 2 -1 -1 2 1 2 4 -2 0 0 2 2 2 3 1 -1 0 2 3 2 4 -4 1 1

#### Primitive - Information

Space group	<i>P</i> 432
Unit cell lattice	(1.63156, 1.63156, 1.63156)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.21866, 0.28323, 0.2974)
Coordinates, edge 1	(0.21866, 0.28323, 0.2974) ↔ (0.28323, 0.21866, 0.7026)
Coordinates, edge 2	(0.21866, 0.28323, 0.2974) ↔ (0.7026, 0.21866, 0.71677)
Coordinates, edge 3	(0.21866, 0.28323, 0.2974) ↔ (-0.21866, 0.71677, 0.2974)
Coordinates, edge 4	(0.21866, 0.28323, 0.2974) ↔ (0.7026, -0.21866, 0.28323)
Coordinates, edge 5	(0.21866, 0.28323, 0.2974) ↔ (0.2974, -0.28323, 0.21866)
Shortest edge length	0.67768
Average edge length	1.00000
Longest edge length	1.13776
Shortest non-bonded distance	0.16774
Smallest angle between edges, degrees	36.52201
Average angle between edges, degrees	88.31658
Largest angle between edges, degrees	178.26011

**Primitive - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 1 0 0 2 4 0 0 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 2  
11 0 0 0 3 6 0 0 0 3 8 0 0 0 3 9 -1 0 0 3 1 0 -1 0 0 3 1 2 0 0 0 4 7 0 0 0 4 1 1 0 0 0 4 1 3 0 0 0 4 1 4 0 0 0 4 1 5 0 0 0 5 6 0 0 0 5 1 0 0 0 5 1 3 0 1 0 5  
14 0 1 0 5 1 6 0 0 0 6 10 -1 0 0 6 1 3 0 1 0 6 1 7 0 0 0 6 1 8 0 0 0 7 8 0 0 0 7 1 3 0 0 0 7 1 5 1 2 0 7 1 9 0 0 0 7 2 0 0 0 0 8 1 2 0 0 0 8 1 7 0 0 1 8 1 8 0 0  
1 8 2 0 0 0 9 1 1 0 0 0 9 1 2 1 0 0 9 1 6 2 1 -1 9 2 1 0 0 0 9 2 2 0 0 0 1 0 1 6 0 0 0 1 0 1 7 1 0 0 1 0 2 1 -2 -1 1 1 1 5 0 0 0 1 1 1 6 2 1 -1 1 1 2 2 -3 2 2 1 1  
2 3 0 0 0 1 2 1 7 0 0 1 1 2 2 0 1 0 -2 1 2 2 2 -1 0 0 1 2 2 4 0 0 0 1 3 1 4 0 0 0 1 3 1 8 0 -1 0 1 3 1 9 0 0 0 1 4 1 5 0 0 0 1 4 1 6 0 -1 0 1 4 1 9 -1 -2 0 1 4 2 3 -2 2  
1 1 5 1 9 -1 2 0 1 5 2 0 -1 2 0 1 5 2 2 -3 2 2 1 6 2 1 -2 -1 1 1 6 2 3 -2 1 1 1 7 1 8 0 0 0 1 7 2 1 -3 -1 1 1 7 2 4 0 0 -1 1 8 1 9 0 1 0 1 8 2 0 0 0 -1 1 8 2 4 -1 0 1  
1 9 2 3 -1 0 1 1 9 2 4 -1 -1 1 2 0 2 2 -2 0 2 2 0 2 2 1 2 2 0 0 0 2 1 2 3 3 2 -2 2 1 2 4 3 1 -2 2 2 2 3 3 2 -2 2 3 2 4 0 -1 0

**Delauney-Dress-symbol** <1:1:336:306 305 210 209 176 175 264 263 240 239 228 227 146 145 52 51 168 167 140 139 314 313 122 121  
200 199 302 301 184 183 130 129 164 163 152 151 88 87 204 203 118 117 82 81 320 319 336 335 156 155 300 299 246 245 220 219 254 253  
172 171 126 125 310 309 78 77 106 105 260 259 278 277 108 107 322 321 244 243 206 205 150 149 238 237 212 211 190 189 180 179 134  
133 194 193 222 221 276 275 328 327 170 169 186 185 202 201 312 311 166 165 196 195 326 325 316 315 292 291 308 307 226 225 162 161  
334 333 294 293 266 265 208 207 188 187 224 223 304 303 236 235 268 267 255 252 251 286 285 270 269 262 261 298 297 288 287 280  
279 284 283 330 329 332 331 296 295 324 323,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63  
65 67 69 84 73 75 77 79 81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137  
139 154 143 145 147 149 151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203  
205 207 209 224 213 215 217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269  
271 273 275 277 279 294 283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333  
335,2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92  
94 96 98 100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158  
160 162 164 166 168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224  
226 228 230 232 234 236 238 240 242 244 246 248 250 252 254 256 258 260 262 264 266 268 270 272 274 276 278 280 282 284 286 288 290



**SI.4.4.** [3, 7] on 2223<sub>13</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.60972, 2.60972, 2.60972)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.016, 0.13737, 0.3626)
Coordinates, edge 1	(0.016, 0.13737, 0.3626) ↔ (0.1374, -0.016, 0.63737)
Coordinates, edge 2	(0.016, 0.13737, 0.3626) ↔ (-0.516, 0.13737, 0.1374)
Coordinates, edge 3	(0.016, 0.13737, 0.3626) ↔ (-0.1126, 0.11263, 0.234)
Coordinates, edge 4	(0.016, 0.13737, 0.3626) ↔ (0.234, 0.3874, 0.61263)
Coordinates, edge 5	(0.016, 0.13737, 0.3626) ↔ (0.1126, 0.11263, 0.766)
Shortest edge length	0.47902
Average edge length	1.00000
Longest edge length	1.50766
Shortest non-bonded distance	0.44797
Smallest angle between edges, degrees	10.06728
Average angle between edges, degrees	89.44158
Largest angle between edges, degrees	150.52095

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 6 0 0 0 2 6 0 1 0 2 8 0 0 0 2 9 0 0 0 2 1 0  
0 0 0 3 4 -1 0 0 3 5 0 0 0 3 7 -1 0 0 3 1 0 0 0 4 5 0 0 0 4 5 1 0 0 4 1 1 0 0 4 1 2 0 0 4 1 3 0 0 5 1 1 0 0 5 1 3 -1 0 0 5 1 4 0 0 0 6 7 0 0 0 6 8 0  
-1 0 6 9 0 0 0 6 1 0 0 -1 0 7 1 0 0 -1 0 7 1 0 1 0 7 1 5 0 0 0 7 1 6 0 0 0 8 9 0 0 0 8 9 0 1 0 8 1 7 0 0 0 8 1 8 0 0 0 8 1 9 0 0 0 9 1 7 0 -1 0 9 1 9 0 0 0 9  
2 0 0 0 0 1 0 15 -1 0 0 1 0 16 0 1 0 11 12 0 0 0 1 1 14 -1 1 1 11 14 0 0 0 1 1 19 0 0 1 1 1 20 0 0 1 1 2 1 13 -2 1 1 12 13 0 0 0 1 2 14 -1 1 1 12 2 1 0 0 0  
1 2 2 2 0 0 0 1 3 14 1 0 0 1 3 2 1 2 -1 1 3 2 2 0 0 0 1 4 1 9 0 0 1 1 4 2 0 1 -1 0 1 5 1 6 0 0 0 1 5 1 6 1 1 0 1 5 2 1 -2 -1 0 1 5 2 2 -4 0 1 1 5 2 3 0 0 0 1 6 2 2 -4  
0 1 1 6 2 3 -1 -1 0 1 6 2 4 0 0 0 1 7 1 8 -1 2 1 1 7 1 8 0 0 0 1 7 2 0 0 1 0 1 7 2 3 -1 4 1 1 7 2 4 0 5 1 1 8 1 9 0 0 0 1 8 2 0 1 -1 -1 1 8 2 3 -1 4 1 1 8 2 4 1 3 0 1 9  
2 0 0 0 0 1 9 2 0 1 -1 -1 2 1 2 2 -2 1 1 2 1 2 2 0 0 0 2 1 2 3 2 1 0 2 1 2 4 4 0 -1 2 2 2 4 4 0 -1 2 3 2 4 1 1 0 2 3 2 4 2 -1 -1

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(5.24241, 5.24241, 5.24241)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.27245, 0.29977, 0.41619)
Coordinates, edge 1	(0.27245, 0.29977, 0.41619) ↔ (0.29977, 0.41619, 0.27245)
Coordinates, edge 2	(0.27245, 0.29977, 0.41619) ↔ (0.22755, 0.29977, 0.58381)
Coordinates, edge 3	(0.27245, 0.29977, 0.41619) ↔ (0.47755, 0.33381, 0.45023)
Coordinates, edge 4	(0.27245, 0.29977, 0.41619) ↔ (0.16619, 0.45023, 0.52245)
Coordinates, edge 5	(0.27245, 0.29977, 0.41619) ↔ (0.33381, 0.45023, 0.47755)
Shortest edge length	0.90972
Average edge length	1.00000
Longest edge length	1.11481
Shortest non-bonded distance	1.38700
Smallest angle between edges, degrees	51.37722
Average angle between edges, degrees	87.88883
Largest angle between edges, degrees	143.16184

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 4 0 0 0 2 8 0 0 0 2 9 0 0 0 2 1 0 0 0 3 4 0 0 0 3 5  
0 0 0 3 6 0 0 0 3 1 1 0 0 4 8 0 0 0 4 1 0 0 0 4 1 2 0 0 0 5 1 1 0 0 0 5 1 3 0 0 0 5 1 4 0 0 0 6 7 0 0 0 6 1 1 0 0 0 6 1 5 0 0 0 6 1 6 0 0 0 7 1 1  
0 0 0 7 1 3 0 0 0 7 1 4 0 0 0 8 9 0 0 0 8 1 2 0 0 0 8 1 7 0 0 0 8 1 8 0 0 0 9 1 0 0 0 9 1 2 0 0 0 9 1 7 0 0 0 9 1 8 0 0 0 1 0 1 2 0 0 0 1 0 1 9 0 0 0 1 0 2 0 0 0  
0 1 1 1 5 0 0 0 1 1 1 6 0 0 0 1 2 1 9 0 0 0 1 2 2 0 0 0 1 3 1 4 0 0 0 1 3 1 9 1 0 0 1 3 2 0 1 0 0 1 3 2 1 0 0 0 1 4 1 9 1 0 0 1 4 2 1 0 0 0 1 4 2 2 0 0 0 1 5 1 6 0 0 0  
1 5 1 8 0 1 0 1 5 2 3 0 0 0 1 5 2 4 0 0 0 1 6 1 7 0 1 0 1 6 1 8 0 1 0 1 6 2 3 0 0 0 1 7 1 8 0 0 0 1 7 2 3 0 -1 0 1 7 2 4 0 -1 0 1 8 2 4 0 -1 0 1 9 2 0 0 0 1 9 2 2 -1 0  
0 2 0 2 1 -1 0 0 2 0 2 2 -1 0 0 2 1 2 2 0 0 0 2 1 2 3 0 0 1 2 1 2 4 0 0 1 2 2 2 3 0 0 1 2 3 2 4 0 0 1 2 3 2 4 2 -1 -1

#### Gyroid2 - Information

Space group	<i>I4_132</i>
Unit cell lattice	(1.76588, 1.76588, 1.76588)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.06775, 0.08191, 0.36314)
Coordinates, edge 1	(0.06775, 0.08191, 0.36314) ↔ (0.13686, -0.06775, 0.58191)
Coordinates, edge 2	(0.06775, 0.08191, 0.36314) ↔ (-0.56775, 0.08191, -0.36314)
Coordinates, edge 3	(0.06775, 0.08191, 0.36314) ↔ (-0.11314, 0.16809, 0.18225)
Coordinates, edge 4	(0.06775, 0.08191, 0.36314) ↔ (0.68225, 0.38686, 0.66809)
Coordinates, edge 5	(0.06775, 0.08191, 0.36314) ↔ (0.61314, 0.16809, 0.81775)
Shortest edge length	0.47670
Average edge length	1.00000
Longest edge length	1.70419
Shortest non-bonded distance	0.21671
Smallest angle between edges, degrees	7.05508
Average angle between edges, degrees	99.61284
Largest angle between edges, degrees	168.66355

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 6 0 0 0 2 6 0 1 0 2 8 0 0 0 2 9 0 0 0 2 1 0  
0 0 0 3 4 -1 0 0 3 5 0 0 0 3 7 -1 0 0 3 1 0 0 0 4 5 0 0 0 4 5 1 0 0 4 1 1 0 0 0 4 1 2 0 0 0 4 1 3 0 0 0 5 1 1 0 0 0 5 1 3 -1 0 0 5 1 4 0 0 0 6 7 0 0 0 6 8 0  
-1 0 6 9 0 0 0 6 1 0 0 -1 0 7 1 0 0 -1 0 7 1 0 1 0 7 1 5 0 0 0 7 1 6 0 0 0 8 9 0 0 0 8 9 0 1 0 8 1 7 0 0 0 8 1 8 0 0 0 8 1 9 0 0 0 9 1 7 0 -1 0 9 1 9 0 0 0 9  
2 0 0 0 0 1 0 1 5 -1 0 0 1 0 1 6 0 1 0 1 1 1 2 0 0 0 1 1 1 4 -1 1 4 1 1 1 4 0 0 0 1 1 1 9 0 0 3 1 1 2 0 0 0 3 1 2 1 3 -2 1 4 1 2 1 3 0 0 0 1 2 1 4 -1 1 4 1 2 2 1 0 0 0  
1 2 2 2 0 0 0 1 3 1 4 1 0 0 1 3 2 1 2 -1 -4 1 3 2 2 0 0 0 1 4 1 9 0 0 3 1 4 2 0 1 -1 -1 1 5 1 6 0 0 0 1 5 1 6 1 1 0 1 5 2 1 -1 -1 1 5 2 2 -3 0 3 1 5 2 3 0 0 0 1 6 2 2  
-3 0 3 1 6 2 3 -1 -1 0 1 6 2 4 0 0 0 1 7 1 8 -1 2 4 1 7 1 8 0 0 0 1 7 2 0 0 1 0 1 7 2 3 -1 3 3 1 7 2 4 0 4 3 1 8 1 9 0 0 0 1 8 2 0 1 -1 -4 1 8 2 3 -1 3 3 1 8 2 4 1 2 -1  
1 9 2 0 0 0 0 1 9 2 0 1 -1 -4 2 1 2 2 -2 1 4 2 1 2 2 0 0 0 2 1 2 3 1 1 1 2 1 2 4 3 0 -3 2 3 2 2 4 3 0 -3 2 3 2 4 1 1 0 2 3 2 4 2 -1 -4

#### Primitive - Information

Space group	<i>P432</i>
Unit cell lattice	(1.60666, 1.60666, 1.60666)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.16453, 0.32669, 0.20605)
Coordinates, edge 1	(0.16453, 0.32669, 0.20605) ↔ (-0.20605, -0.16453, 0.32669)
Coordinates, edge 2	(0.16453, 0.32669, 0.20605) ↔ (0.16453, 0.67331, -0.20605)
Coordinates, edge 3	(0.16453, 0.32669, 0.20605) ↔ (-0.16453, 0.20605, 0.32669)
Coordinates, edge 4	(0.16453, 0.32669, 0.20605) ↔ (0.32669, 0.16453, 0.79395)
Coordinates, edge 5	(0.16453, 0.32669, 0.20605) ↔ (-0.16453, -0.20605, 0.67331)
Shortest edge length	0.59552
Average edge length	1.00000
Longest edge length	1.25528
Shortest non-bonded distance	0.33150
Smallest angle between edges, degrees	24.93500
Average angle between edges, degrees	86.98236
Largest angle between edges, degrees	153.78638

**Primitive - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 2 1 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 6 0 0 0 2 6 0 1 1 2 8 0 0 0 2 9 0 0 0 2 1 0  
0 0 0 3 4 -2 -1 0 3 5 0 0 0 3 7 -2 -1 0 3 1 0 0 0 4 5 0 0 0 4 5 2 1 0 4 1 1 0 0 0 4 1 2 0 0 0 4 1 3 0 0 0 5 1 1 0 0 0 5 1 3 -2 -1 0 5 1 4 0 0 0 6 7 0 0 0 6  
8 0 -1 -1 6 9 0 0 0 6 1 0 0 -1 -1 7 1 0 2 1 0 7 1 5 0 0 0 7 1 6 0 0 0 8 9 0 0 0 8 9 0 1 1 8 1 7 0 0 0 8 1 8 0 0 0 8 1 9 0 0 0 9 1 7 0 -1 -1 9 1 9 0 0 0 9  
0 0 9 2 0 0 0 0 1 0 1 5 -2 -1 0 1 0 1 6 0 1 1 1 1 1 2 0 0 0 1 1 1 4 0 0 0 1 1 1 4 0 1 1 1 9 1 0 0 1 1 2 0 1 0 0 1 2 1 3 -2 -1 1 1 2 1 3 0 0 0 1 2 1 4 0 0 1 1 2 2 1 0  
0 0 1 2 2 2 0 0 0 1 3 1 4 2 1 0 1 3 2 1 2 -1 1 3 2 2 0 0 0 1 4 1 9 1 0 0 1 4 2 0 1 -1 -1 1 5 1 6 0 0 0 1 5 1 6 2 2 1 1 5 2 1 -1 -1 1 5 2 2 -3 2 0 1 5 2 3 0 0 0 1 6 2 2  
2 2 -3 2 0 1 6 2 3 -2 -2 -1 1 6 2 4 0 0 0 1 7 1 8 0 0 0 1 7 1 8 0 1 2 1 7 2 0 0 1 1 1 7 2 3 -1 1 2 1 7 2 4 1 3 3 1 8 1 9 0 0 0 1 8 2 0 0 0 -1 1 8 2 3 -1 1 2 1 8 2 4 1 2  
1 1 9 2 0 0 0 -1 1 9 2 0 0 0 2 1 2 2 -2 -1 1 2 1 2 2 0 0 0 2 1 2 3 1 1 1 2 1 2 4 3 2 0 2 2 2 4 3 2 0 2 3 2 4 2 1 -1 2 3 2 4 2 2 1

**Delauney-Dress-symbol** <1.1:336:304 303 124 123 0 0 222 221 226 225 106 105 200 199 0 0 52 51 36 35 68 67 320 319 336 335 90 89 0 0  
188 187 70 69 50 49 180 179 118 117 0 0 116 115 182 181 312 311 190 189 0 0 148 147 168 167 194 193 322 321 96 95 0 0 308 307 210 209  
292 291 270 269 246 245 0 0 316 315 334 333 294 293 244 243 0 0 238 237 224 223 122 121 176 175 202 201 0 0 178 177 302 301 0 0 278  
277 252 251 260 259 158 157 144 143 232 231 234 233 0 0 184 183 164 163 214 213 0 0 266 265 216 215 196 195 0 0 300 299 204 203 0 0  
310 309 0 0 306 305 288 287 0 0 264 263 236 235 0 0 262 261 0 0 328 327 276 275 256 255 0 0 280 279 0 0 284 283 330 329 332 331 0 0 296  
295 0 0 0 324 323 0 0,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63 65 67 69 84 73 75 77 79  
81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137 139 154 143 145 147 149  
151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203 205 207 209 224 213 215  
217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269 271 273 275 277 294  
283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333 335,2 4 6 8 10 12 14 16 18 20  
22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104 106 108  
110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164 166 168 170 172 174  
176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224 226 228 230 232 234 236 238 240  
242 244 246 248 250 252 254 256 258 260 262 264 266 268 270 272 274 276 278 280 282 284 286 288 290 292 294 296 298 300 302 304 306



**SI.4.5.** [3, 7] on 2223<sub>14</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.19389, 2.19389, 2.19389)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.08037, 0.20424, 0.27532)
Coordinates, edge 1	(0.08037, 0.20424, 0.27532) ↔ (0.29576, -0.27532, 0.58037)
Coordinates, edge 2	(0.08037, 0.20424, 0.27532) ↔ (-0.33037, 0.52532, -0.04576)
Coordinates, edge 3	(0.08037, 0.20424, 0.27532) ↔ (-0.02532, 0.04576, 0.16963)
Coordinates, edge 4	(0.08037, 0.20424, 0.27532) ↔ (0.22468, 0.41963, 0.20424)
Coordinates, edge 5	(0.08037, 0.20424, 0.27532) ↔ (0.08037, -0.20424, 0.72468)
Shortest edge length	0.47792
Average edge length	1.00000
Longest edge length	1.34328
Shortest non-bonded distance	0.22948
Smallest angle between edges, degrees	20.56570
Average angle between edges, degrees	101.06299
Largest angle between edges, degrees	156.15936

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 1 2 -4 9 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 2 2 1 1 0 0 0 3 8 0 0 0 3 1 0 0 0 0 3 1 2 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 4 6 0 0 0 4 8 0 0 0 4 9 -1 2 4 -9 4 1 0 -1 2 4 -9 4 1 5 0 0 0 5 7 0 0 0 5 1 1 0 0 0 5 1 6 0 0 0 5 1 7 0 0 0 5 1 8 0 0 0 6 7 0 0 0 6 1 2 0 1 0 6 1 5 0 0 0 6 1 9 0 0 0 6 2 0 0 0 0 7 1 7 0 0 1 7 1 8 0 0 0 7 2 0 0 0 0 7 2 1 0 0 0 8 1 0 -1 2 4 -9 8 1 4 0 0 0 8 1 6 -9 3 -6 8 2 1 -9 3 -7 9 1 1 0 0 0 9 1 4 1 5 -6 1 2 9 1 5 1 2 -4 9 9 2 2 0 0 0 9 2 3 0 0 0 1 0 1 2 0 0 0 1 0 1 6 3 -1 3 1 0 2 4 0 0 0 1 1 1 3 7 -2 5 1 1 1 7 0 0 0 1 1 2 2 -8 4 -7 1 1 2 3 0 0 0 1 2 1 3 0 0 0 1 2 1 9 0 -1 0 1 2 2 0 0 -1 0 1 2 2 4 0 0 0 1 3 1 4 0 0 0 1 3 1 9 0 -1 0 1 3 2 2 -1 5 6 -1 2 1 3 2 3 -7 2 -5 1 4 2 1 -9 3 -7 1 4 2 2 -1 5 6 -1 2 1 4 2 3 -1 5 6 -1 2 1 5 1 9 0 0 0 1 5 2 0 -4 0 -3 1 5 2 2 -1 2 4 -9 1 5 2 4 -4 1 -3 1 6 1 7 0 0 0 1 6 1 8 0 0 0 1 6 2 1 0 0 -1 1 6 2 4 -3 1 -3 1 7 2 0 0 0 -1 1 7 2 1 0 0 -1 1 7 2 2 -8 4 -7 1 8 1 9 1 0 0 1 8 2 1 0 0 0 1 8 2 3 -6 3 -5 1 8 2 4 -3 1 -3 1 9 2 3 -7 3 -5 1 9 2 4 -4 1 -3 2 0 2 2 -8 4 -6 1 2 0 2 4 0 1 0 2 1 2 3 -6 3 -5

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.05602, 2.05602, 2.05602)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.05414, 0.24617, 0.36284)
Coordinates, edge 1	(0.05414, 0.24617, 0.36284) ↔ (-0.25383, -0.13716, 0.55414)
Coordinates, edge 2	(0.05414, 0.24617, 0.36284) ↔ (-0.30414, 0.38716, 0.50383)
Coordinates, edge 3	(0.05414, 0.24617, 0.36284) ↔ (-0.11284, 0.00383, 0.19586)
Coordinates, edge 4	(0.05414, 0.24617, 0.36284) ↔ (-0.25383, 0.13716, -0.05414)
Coordinates, edge 5	(0.05414, 0.24617, 0.36284) ↔ (0.05414, -0.24617, 0.13716)
Shortest edge length	0.69567
Average edge length	1.00000
Longest edge length	1.11352
Shortest non-bonded distance	0.22317
Smallest angle between edges, degrees	31.05225
Average angle between edges, degrees	77.96516
Largest angle between edges, degrees	146.44324

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 1 0 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 3 8 0 0 0 3 1 1 0 0 0 3 1 2 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 4 7 0 0 0 4 8 0 0 0 4 9 -1 0 0 4 1 1 -1 0 0 4 1 5 0 0 0 5 6 0 0 0 5 1 0 0 0 5 1 6 0 0 0 5 1 0 0 5 1 8 0 0 0 6 7 0 0 0 6 1 7 0 0 0 6 1 8 0 1 0 6 1 9 0 0 0 6 2 0 0 0 0 7 1 2 0 0 1 7 1 5 0 0 0 7 2 0 0 0 0 7 2 1 0 0 0 8 1 1 -1 0 0 8 1 4 0 0 0 8 1 6 -1 1 0 8 1 9 -1 0 0 9 1 0 0 0 9 1 4 2 1 -1 9 1 5 1 0 0 9 2 2 0 0 0 9 2 3 0 0 0 1 0 1 3 1 0 0 1 0 1 8 0 0 0 1 0 2 2 -1 1 1 0 2 3 0 0 0 1 1 1 2 0 0 0 1 1 1 6 0 1 0 1 1 2 4 0 0 0 1 2 1 3 0 0 0 1 2 2 0 0 0 -1 1 2 1 2 0 0 -1 1 2 2 4 0 0 0 1 3 1 4 0 0 0 1 3 1 2 1 0 0 -1 1 3 2 2 -1 1 1 3 2 3 -1 0 0 1 4 1 9 -1 0 0 1 4 2 2 -2 1 1 1 4 2 3 -2 1 1 1 5 2 0 0 0 -1 1 5 2 1 0 0 0 1 5 2 2 -1 0 0 1 5 2 4 0 0 0 1 6 1 7 0 0 0 1 6 1 8 0 0 0 1 6 1 9 0 -1 0 1 6 2 4 0 -1 0 1 7 1 9 0 0 0 1 7 2 1 0 -1 0 1 7 2 3 -1 1 1 1 7 2 4 0 -1 0 1 8 1 9 0 -1 0 1 8 2 0 0 -1 0 1 8 2 2 -1 1 1 1 9 2 3 -1 1 1 2 0 2 2 -1 0 1 2 0 2 4 0 0 1 2 1 2 3 -1 0 1 2 1 2 4 0 0 0

#### Gyroid2 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.53827, 1.53827, 1.53827)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0612, 0.25827, 0.0973)
Coordinates, edge 1	(0.0612, 0.25827, 0.0973) ↔ (0.5973, 0.5612, 0.75827)
Coordinates, edge 2	(0.0612, 0.25827, 0.0973) ↔ (0.6888, 0.6527, 0.49173)
Coordinates, edge 3	(0.0612, 0.25827, 0.0973) ↔ (0.1527, -0.00827, 0.1888)
Coordinates, edge 4	(0.0612, 0.25827, 0.0973) ↔ (-0.24173, 0.4027, -0.0612)
Coordinates, edge 5	(0.0612, 0.25827, 0.0973) ↔ (0.0612, -0.25827, -0.5973)
Shortest edge length	0.45577
Average edge length	1.00000
Longest edge length	1.38960
Shortest non-bonded distance	0.14325
Smallest angle between edges, degrees	19.12493
Average angle between edges, degrees	100.78353
Largest angle between edges, degrees	151.47311

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 5 0 0 0 2 6 0 0 0 2 7 6 -12 5 1 2 9 0 0 0 2 1 0 0 0 0  
2 1 1 0 0 0 3 4 0 0 0 3 5 0 0 0 3 1 2 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 7 0 0 0 4 1 3 0 0 0 4 1 6 0 0 0 4 1 7 0 0 0 4 1 8 0 0 0 5 1 1 0 0 0 5 1 2 0 3  
-1 2 5 1 5 0 0 0 5 1 9 0 0 0 6 8 0 0 0 6 1 0 0 0 0 6 1 6 0 0 1 6 2 0 0 0 6 2 1 0 0 0 7 8 0 0 0 7 9 -6 1 2 -5 1 7 1 0 -6 1 2 -5 1 7 1 8 0 0 0 8 1 0 -6 1 2 -5 1 8 1 4  
-4 9 -3 8 8 1 9 -4 6 -2 6 8 2 1 0 0 0 9 1 1 0 0 0 9 1 8 6 -1 2 5 1 9 2 1 6 -1 4 6 0 9 2 2 0 0 0 9 2 3 0 0 0 1 0 1 6 0 0 1 1 0 1 9 2 -6 2 5 1 0 2 4 0 0 0 1 1 1 2 0 3 -1 2  
1 1 2 0 3 -5 2 1 1 1 2 2 -3 9 -3 9 1 1 2 3 0 0 0 1 2 1 3 0 0 0 1 2 1 4 0 0 0 1 2 1 9 0 -3 1 2 1 2 2 2 -3 6 -2 7 1 3 1 6 0 0 0 1 3 1 8 3 -6 2 4 1 3 2 2 -3 6 -2 7 1 3 2 4 0 0  
-1 1 4 1 5 0 0 0 1 4 1 9 0 -3 1 2 1 4 1 2 4 -9 3 8 1 4 2 3 -2 5 -2 2 1 5 1 7 1 0 0 1 5 1 9 0 0 0 1 5 2 3 -2 5 -2 2 1 5 2 4 -2 6 -2 5 1 6 1 7 0 0 0 1 6 2 0 0 0 -1 1 6 2 4 0  
0 -1 1 7 1 8 0 0 0 1 7 2 0 0 0 -1 1 7 2 3 -3 5 -2 2 1 7 2 4 -3 6 -2 5 1 8 2 2 -6 1 2 -5 1 8 1 8 2 4 -3 6 -2 5 1 9 2 4 -2 6 -2 5 2 0 2 1 0 0 0 2 0 2 2 -6 1 4 -6 0 2 0 2 3 -3 5  
-2 1 2 1 2 2 -6 1 4 -6 0 2 1 2 3 -6 1 4 -6 0

#### Primitive - Information

Space group	<i>P</i> 432
Unit cell lattice	(1.63339, 1.63339, 1.63339)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.16272, 0.34895, 0.22113)
Coordinates, edge 1	(0.16272, 0.34895, 0.22113) ↔ (0.22113, -0.16272, 0.65105)
Coordinates, edge 2	(0.16272, 0.34895, 0.22113) ↔ (-0.22113, 0.65105, -0.16272)
Coordinates, edge 3	(0.16272, 0.34895, 0.22113) ↔ (-0.16272, 0.22113, 0.34895)
Coordinates, edge 4	(0.16272, 0.34895, 0.22113) ↔ (-0.22113, -0.16272, 0.34895)
Coordinates, edge 5	(0.16272, 0.34895, 0.22113) ↔ (-0.16272, 0.34895, 0.77887)
Shortest edge length	0.60807
Average edge length	1.00000
Longest edge length	1.09577
Shortest non-bonded distance	0.38106
Smallest angle between edges, degrees	31.67541
Average angle between edges, degrees	73.73305
Largest angle between edges, degrees	145.15040

**Primitive - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 7 1 0 0 2 9 0 0 0 2 1 0 0 0 2  
1 1 0 0 0 3 5 0 0 0 3 1 0 0 0 0 3 1 2 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 4 8 0 0 0 4 1 1 0 0 0 4 1 5 0 0 0 4 1 6 0 0 0 4 1 7 0 0 0 5 7 0 0 0 5 1 0 -1 0 0 5 1 4 0 0 0  
5 1 6 0 1 0 5 1 8 0 0 0 6 7 0 0 0 6 8 0 0 0 6 1 3 0 0 1 6 1 9 0 0 0 6 2 0 0 0 6 2 1 0 0 0 7 9 -1 0 0 7 1 0 -1 0 0 7 2 1 0 0 0 8 1 2 -1 0 -1 8 1 7 0 0 0 8 1 9  
-1 0 -2 8 2 0 0 0 9 1 1 0 0 0 9 1 4 0 1 -1 9 2 1 1 0 0 9 2 2 0 0 0 9 2 3 0 0 0 1 0 1 3 0 0 0 1 0 1 6 1 1 0 1 0 2 4 0 0 0 1 1 1 5 0 0 0 1 1 1 7 1 2 0 1 1 2 2 0 0 0  
1 1 2 4 0 1 0 1 2 1 3 0 0 0 1 2 1 4 0 0 0 1 2 1 9 0 0 -1 1 2 2 0 1 0 1 1 2 2 3 0 -1 1 1 3 1 9 0 0 -1 1 3 2 0 0 0 -1 1 3 2 4 0 0 0 1 4 1 8 0 0 0 1 4 2 2 0 -1 1 1 4 2 3 0  
-1 1 1 5 1 6 0 0 0 1 5 1 8 0 -1 0 1 5 2 0 0 1 -1 1 5 2 3 -1 0 -1 1 5 2 4 0 1 0 1 6 1 7 0 0 0 1 6 1 8 0 -1 0 1 6 2 4 -1 -1 0 1 7 1 9 -1 0 -2 1 7 2 2 -1 -2 0 1 7 2 4 -1 -1  
0 1 8 2 1 0 1 -1 1 8 2 2 0 -1 1 1 8 2 3 -1 1 -1 1 9 2 1 0 0 0 1 9 2 2 0 -2 2 2 0 2 3 -1 -1 0 2 0 2 4 0 0 1 2 1 2 2 0 -2 2 2 1 2 3 -1 0 0

**Delauney-Dress-symbol** <1.1:336:108 107 152 151 170 169 32 31 226 225 198 197 214 213 122 121 206 205 176 175 166 165 306 305  
294 293 90 89 228 227 182 181 192 191 276 275 46 45 288 287 290 289 274 273 264 263 100 99 60 59 94 93 96 95 112 111 224 223 268 267  
130 129 246 245 284 283 302 301 126 125 86 85 242 241 326 325 232 231 124 123 292 291 244 243 262 261 314 313 154 153 212 211 300  
299 256 255 218 217 208 207 248 247 280 279 188 187 334 333 322 321 160 159 312 311 330 329 252 251 156 155 172 171 250 249 320 319  
308 307 174 173 204 203 194 193 236 235 336 335 278 277 202 201 238 237 216 215 254 253 270 269 286 285 324 323 328 327 298 297 316  
315 272 271 304 303 318 317 332 331,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63 65 67 69  
84 73 75 77 79 81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137 139 154 143  
145 147 149 151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203 205 207 209  
224 213 215 217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269 271 273 275  
277 279 294 283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333 335,2 4 6 8 10  
12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100  
102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164 166  
168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224 226 228 230 232  
234 236 238 240 242 244 246 248 250 252 254 256 258 260 262 264 266 268 270 272 274 276 278 280 282 284 286 288 290 292 294 296 298



**SI.4.6.** [3, 7] on 2223<sub>21</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.88554, 2.88554, 2.88554)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.12324, 0.12881, 0.36714)
Coordinates, edge 1	(0.12324, 0.12881, 0.36714) ↔ (0.12324, 0.37119, 0.13286)
Coordinates, edge 2	(0.12324, 0.12881, 0.36714) ↔ (0.12676, -0.11714, 0.12119)
Coordinates, edge 3	(0.12324, 0.12881, 0.36714) ↔ (0.12119, 0.37324, 0.61714)
Coordinates, edge 4	(0.12324, 0.12881, 0.36714) ↔ (0.37119, 0.13286, 0.12324)
Coordinates, edge 5	(0.12324, 0.12881, 0.36714) ↔ (-0.12119, 0.37324, 0.38286)
Shortest edge length	0.97269
Average edge length	1.00000
Longest edge length	1.00890
Shortest non-bonded distance	0.03415
Smallest angle between edges, degrees	57.96365
Average angle between edges, degrees	88.93240
Largest angle between edges, degrees	179.31015

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 7 0 0 0 3 9 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 5 0 0 0 4 12 0 0 0 4 16 0 0 0 4 17 0 0 0 4 18 0 0 0 5 6 0 0 0 5 13 1 0 0 5 17 0 0 0 5  
19 0 0 0 5 2 0 0 0 0 6 8 0 0 0 6 12 0 1 0 6 18 0 1 0 6 20 0 0 0 6 21 0 0 0 7 8 0 0 0 7 10 0 0 1 7 11 0 0 1 7 15 0 0 0 7 22 0 0 0 8 12 0 1 0 8 22 0 0 0  
8 23 0 0 0 8 24 0 0 0 9 10 0 0 0 9 13 0 0 0 9 17 -1 0 0 9 21 0 -1 -1 9 24 -1 1 -1 10 11 0 0 0 10 15 0 0 -1 10 20 0 -1 -1 10 21 0 -1 -1 11 12 0 0 0  
11 19 -1 -1 1 11 22 0 0 -1 11 23 0 -1 0 12 18 0 0 0 12 23 0 -1 0 13 14 0 0 0 13 17 -1 0 0 13 19 -1 0 0 13 23 0 0 -1 14 15 0 0 0 14 18 1 -1 -1 14  
21 1 -2 -1 14 23 0 0 -1 14 24 0 0 -1 15 16 1 -1 -1 15 18 1 -1 -1 15 20 0 -1 0 16 17 0 0 0 16 18 0 0 0 16 19 -1 0 1 16 20 -1 0 1 16 22 0 1 -1 17 22  
0 1 -1 17 24 0 1 -1 18 21 0 -1 0 19 20 0 0 0 19 22 1 1 -2 19 23 1 0 -1 20 21 0 0 0 21 24 -1 2 0 22 24 0 0 0 23 24 0 0 0

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.11127, 2.11127, 2.11127)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0438, 0.15562, 0.45847)
Coordinates, edge 1	(0.0438, 0.15562, 0.45847) ↔ (0.4562, 0.15562, 0.54153)
Coordinates, edge 2	(0.0438, 0.15562, 0.45847) ↔ (-0.29153, 0.09438, 0.7938)
Coordinates, edge 3	(0.0438, 0.15562, 0.45847) ↔ (0.40562, 0.2062, 0.20847)
Coordinates, edge 4	(0.0438, 0.15562, 0.45847) ↔ (0.34438, 0.54153, 0.5438)
Coordinates, edge 5	(0.0438, 0.15562, 0.45847) ↔ (0.40562, -0.2062, 0.29153)
Shortest edge length	0.88817
Average edge length	1.00000
Longest edge length	1.13635
Shortest non-bonded distance	0.37744
Smallest angle between edges, degrees	46.39065
Average angle between edges, degrees	89.83397
Largest angle between edges, degrees	169.68853

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 6 0 0 0 3 12 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 6 0 0 0 4 8 0 0 0 4 11 2 1 0 4 16 0 0 0 4 17 0 0 0 4 18 0 0 0 5 7 0 0 0 5 10 0 0 0 5  
13 0 1 -1 5 14 0 1 -1 5 19 0 0 0 6 15 0 0 0 6 18 0 0 0 6 20 0 0 0 6 21 0 0 0 7 8 0 0 0 7 15 0 0 1 7 19 0 0 0 7 22 0 0 0 7 23 0 0 0 8 15 0 0 1 8 17 0  
0 0 8 20 0 0 1 8 24 0 0 0 9 10 0 0 0 9 11 0 0 0 9 20 3 1 0 9 22 1 0 0 9 23 1 0 0 9 24 3 1 -1 10 14 0 1 -1 10 17 -1 0 -1 10 20 3 1 0 10 21 3 1 0 11  
12 0 0 0 11 16 -2 -1 0 11 18 -2 -1 0 11 23 1 0 0 12 14 0 0 0 12 18 -2 -1 0 12 22 -3 -2 1 12 24 -1 -1 0 13 14 0 0 0 13 15 0 0 0 13 16 -3 -1 -1 13 19  
0 -1 1 13 23 0 0 -1 14 17 -1 -1 0 14 24 -1 -1 0 15 20 0 0 0 15 23 0 0 -1 16 17 0 0 0 16 19 3 0 2 16 21 4 1 1 16 23 3 1 0 17 21 4 1 1 17 24 0 0 0  
18 19 -1 -1 1 18 21 0 0 0 18 22 -1 -1 1 19 21 1 1 -1 19 22 0 0 0 20 21 0 0 0 20 24 0 0 -1 22 23 0 0 0 22 24 2 1 -1

#### Gyroid2 - Information

Space group	<i>I4_132</i>
Unit cell lattice	(4.01782, 4.01782, 4.01782)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0031, 0.00342, 0.33394)
Coordinates, edge 1	(0.0031, 0.00342, 0.33394) ↔ (0.0031, -0.00342, 0.16606)
Coordinates, edge 2	(0.0031, 0.00342, 0.33394) ↔ (0.2469, 0.08394, 0.25342)
Coordinates, edge 3	(0.0031, 0.00342, 0.33394) ↔ (0.08394, 0.25342, 0.2469)
Coordinates, edge 4	(0.0031, 0.00342, 0.33394) ↔ (0.16606, -0.0031, 0.50342)
Coordinates, edge 5	(0.0031, 0.00342, 0.33394) ↔ (0.08394, -0.25342, 0.2531)
Shortest edge length	0.67508
Average edge length	1.00000
Longest edge length	1.12959
Shortest non-bonded distance	1.09499
Smallest angle between edges, degrees	35.04223
Average angle between edges, degrees	92.25062
Largest angle between edges, degrees	151.25893

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 4 0 0 0 3 9 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 7 0 0 0 4 1 0 0 0 4 1 1 0 0 0 4 1 4 0 0 0 4 1 6 0 0 0 5 8 0 0 0 5 1 2 0 0 0 5 1 6 0 0 0 5  
1 7 0 0 0 5 1 8 0 0 0 6 7 0 0 0 6 8 0 0 0 6 1 5 1 0 0 6 1 9 0 0 0 6 2 0 0 0 0 6 2 1 0 0 0 7 1 6 0 0 0 7 1 9 0 0 0 7 2 2 0 0 0 7 2 3 0 0 0 8 1 6 0 0 0 8 2 1 0 0 0  
8 2 3 0 0 0 8 2 4 0 0 0 9 1 0 0 0 0 9 1 3 0 0 0 9 2 1 0 1 0 9 2 2 0 1 0 9 2 3 0 1 0 1 0 1 1 0 0 0 1 0 1 4 0 0 0 1 0 2 1 0 1 0 1 0 2 4 0 1 0 1 1 1 2 0 0 0 1 1 1 6 0 0  
0 1 1 1 8 0 0 0 1 1 2 0 0 0 1 1 2 1 7 0 0 0 1 2 1 9 0 0 1 1 2 2 0 0 1 1 2 2 0 0 1 1 3 1 5 0 0 0 1 3 1 7 -1 0 -1 1 3 1 8 -1 0 -1 1 3 2 3 0 1 0 1 3 2 4 0 1 0 1 4 1 5 0  
0 0 1 4 1 7 -1 0 -1 1 4 1 9 -1 0 0 1 4 2 4 0 1 0 1 5 1 8 -1 0 -1 1 5 1 9 -1 0 0 1 5 2 0 -1 0 0 1 6 1 8 0 0 0 1 6 2 3 0 0 0 1 7 1 8 0 0 0 1 7 1 9 0 0 1 1 7 2 4 1 1 1 1 8  
2 0 0 0 1 1 9 2 2 0 0 0 2 0 2 1 0 0 0 2 0 2 2 0 0 0 2 1 2 2 0 0 0 2 1 2 4 0 0 0 2 2 2 3 0 0 0 2 3 2 4 0 0 0

#### Primitive - Information

Space group	<i>P432</i>
Unit cell lattice	(2.48673, 2.48673, 2.48673)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.1037, 0.44314, 0.21473)
Coordinates, edge 1	(0.1037, 0.44314, 0.21473) ↔ (0.1037, 0.55686, -0.21473)
Coordinates, edge 2	(0.1037, 0.44314, 0.21473) ↔ (-0.1037, 0.21473, 0.44314)
Coordinates, edge 3	(0.1037, 0.44314, 0.21473) ↔ (0.21473, 0.44314, -0.1037)
Coordinates, edge 4	(0.1037, 0.44314, 0.21473) ↔ (0.21473, 0.1037, 0.44314)
Coordinates, edge 5	(0.1037, 0.44314, 0.21473) ↔ (-0.21473, 0.55686, -0.1037)
Shortest edge length	0.83861
Average edge length	1.00000
Longest edge length	1.15501
Shortest non-bonded distance	0.48210
Smallest angle between edges, degrees	24.10558
Average angle between edges, degrees	89.71906
Largest angle between edges, degrees	138.15681

**Primitive - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
1 2 0 0 0 3 7 0 0 0 3 1 0 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 8 0 0 0 4 1 2 0 0 0 4 1 6 0 0 0 4 1 7 0 0 0 4 1 8 0 0 0 5 6 0 0 0 5 7 0 0 0 5 1 0 1 0 0 5  
1 3 1 0 0 5 1 9 0 0 0 5 2 0 0 0 0 6 8 0 0 0 6 1 0 1 0 0 6 1 6 0 1 0 6 1 7 0 1 0 6 2 1 0 0 0 7 1 5 0 0 0 7 2 2 0 0 0 7 2 3 0 0 0 8 1 8 0 0 0 8 2 1 0 0  
0 8 2 2 0 0 0 8 2 4 0 0 0 9 1 0 0 0 0 9 1 1 0 0 0 9 1 7 -1 1 0 9 2 2 0 0 1 9 2 3 0 0 1 9 2 4 0 0 1 1 0 1 3 0 0 0 1 0 1 7 -1 1 0 1 1 1 2 0 0 0 1 1 1 4 0 0 0 1 1 2 0 -1  
0 -1 1 1 2 1 -1 0 -1 1 1 2 4 0 0 1 1 2 1 7 0 0 0 1 2 1 9 -1 0 -1 1 2 2 0 -1 0 -1 1 2 2 3 1 -1 1 1 3 1 4 0 0 0 1 3 1 8 0 0 1 1 3 1 9 -1 0 0 1 3 2 4 0 0 1 1 4 1 5 0 0  
1 4 1 6 -1 1 1 1 4 2 1 -1 0 -1 1 4 2 4 0 0 1 1 5 1 6 -1 1 -1 1 5 1 8 -1 1 -1 1 5 1 9 -1 2 1 -2 1 5 2 3 0 0 0 1 6 1 7 0 0 0 1 6 1 8 0 0 0 1 6 1 2 1 0 -1 0 1 7 2 3 1 -1 1 1 8  
1 9 -1 0 -1 1 8 2 4 0 0 0 1 9 2 0 0 0 0 1 9 2 3 2 -1 2 2 0 2 1 0 0 0 2 0 2 2 0 0 0 2 1 2 2 0 0 0 2 2 2 3 0 0 0 2 2 4 0 0 0

**Delauney-Dress-symbol** <1.1:336:108 107 196 195 252 251 126 125 282 281 180 179 258 257 222 221 236 235 112 111 254 253 326 325  
50 49 82 81 152 151 66 65 242 241 192 191 130 129 262 261 176 175 116 115 248 247 84 83 324 323 158 157 146 145 230 229 276 275 74  
73 244 243 150 149 168 167 246 245 274 273 304 303 224 223 122 121 312 311 202 201 332 331 138 137 268 267 286 285 234 233 164 163  
210 209 184 183 256 255 250 249 144 143 314 313 284 283 264 263 190 189 308 307 270 269 330 329 316 315 156 155 174 173 336 335 198  
197 232 231 216 215 318 317 260 259 294 293 208 207 296 295 240 239 334 333 310 309 298 297 302 301 320 319 292 291 238 237 290 289  
278 277 328 327 306 305 288 287 322 321,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63 65  
67 69 84 73 75 77 79 81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137 139  
154 143 145 147 149 151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203 205  
207 209 224 213 215 217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269 271  
273 275 277 279 294 283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333 335,2 4  
6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98  
100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164  
166 168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224 226 228 230  
232 234 236 238 240 242 244 246 248 250 252 254 256 258 260 262 264 266 268 270 272 274 276 278 280 282 284 286 288 290 292 294 296



**SI.4.7.** [3, 7] on 2223<sub>23</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(5.42784, 5.42784, 5.42784)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.08916, 0.1486, 0.51049)
Coordinates, edge 1	(0.08916, 0.1486, 0.51049) ↔ (-0.08916, 0.1486, 0.48951)
Coordinates, edge 2	(0.08916, 0.1486, 0.51049) ↔ (0.1486, -0.01049, 0.41084)
Coordinates, edge 3	(0.08916, 0.1486, 0.51049) ↔ (0.1486, 0.01049, 0.58916)
Coordinates, edge 4	(0.08916, 0.1486, 0.51049) ↔ (0.1014, 0.16084, 0.73951)
Coordinates, edge 5	(0.08916, 0.1486, 0.51049) ↔ (0.16084, 0.23951, 0.6014)
Shortest edge length	0.79893
Average edge length	1.00000
Longest edge length	1.24664
Shortest non-bonded distance	1.18219
Smallest angle between edges, degrees	39.80668
Average angle between edges, degrees	93.05695
Largest angle between edges, degrees	158.72608

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2  
 11 0 0 0 3 6 0 0 0 3 8 0 0 0 3 9 0 0 0 3 11 0 0 0 3 12 0 0 0 4 7 0 0 0 4 10 0 0 0 4 13 0 0 0 4 14 0 0 0 4 15 0 0 0 5 8 0 0 0 5 11 0 0 0 5 16 0 0 0 5  
 17 0 0 0 5 18 0 0 0 6 7 0 0 0 6 12 0 0 0 6 17 1 0 0 6 19 0 0 0 6 20 0 0 0 7 13 0 0 0 7 15 0 0 0 7 16 0 1 0 7 19 0 0 0 8 11 0 0 0 8 18 0 0 0 8 21 0 0  
 0 8 22 0 0 0 9 10 0 0 0 9 12 0 0 0 9 22 0 0 1 9 23 0 0 0 9 24 0 0 0 10 13 0 0 0 10 21 0 0 1 10 22 0 0 1 10 24 0 0 0 11 15 0 -1 0 11 16 0 0 0 11 21  
 0 0 0 12 17 1 0 0 12 18 1 0 0 12 19 0 0 0 12 24 0 0 0 13 14 0 0 0 13 16 0 1 0 13 19 0 0 0 13 24 0 0 0 14 15 0 0 0 14 16 0 1 0 14 17 0 1 0 14 20  
 -1 1 0 14 23 0 1 -1 15 16 0 1 0 15 21 0 1 0 15 23 0 1 -1 16 17 0 0 0 17 18 0 0 0 17 20 -1 0 0 18 19 -1 0 0 18 20 -1 0 0 18 22 0 0 0 19 20 0 0 0 19  
 24 0 0 0 20 22 1 0 0 20 23 1 0 -1 21 22 0 0 0 21 23 0 0 -1 21 24 0 0 -1 22 23 0 0 -1 23 24 0 0

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.09628, 2.09628, 2.09628)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.13882, 0.23255, 0.4576)
Coordinates, edge 1	(0.13882, 0.23255, 0.4576) ↔ (-0.13882, 0.26745, 0.4576)
Coordinates, edge 2	(0.13882, 0.23255, 0.4576) ↔ (0.0424, -0.13882, 0.73255)
Coordinates, edge 3	(0.13882, 0.23255, 0.4576) ↔ (-0.26745, -0.0424, 0.63882)
Coordinates, edge 4	(0.13882, 0.23255, 0.4576) ↔ (-0.38882, 0.2924, 0.51745)
Coordinates, edge 5	(0.13882, 0.23255, 0.4576) ↔ (-0.2076, 0.01745, 0.11118)
Shortest edge length	0.58659
Average edge length	1.00000
Longest edge length	1.12163
Shortest non-bonded distance	0.09395
Smallest angle between edges, degrees	6.46714
Average angle between edges, degrees	62.15457
Largest angle between edges, degrees	115.36317

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 7 1 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1  
 0 0 0 3 5 0 0 0 3 9 0 0 0 3 12 0 0 0 3 13 0 0 0 3 14 0 0 0 4 6 0 0 0 4 11 0 0 0 4 15 0 0 0 4 16 0 0 0 4 17 0 0 0 5 7 0 0 0 5 9 -1 0 0 5 14 0 0 0 5 17  
 0 0 0 5 18 0 0 0 6 8 0 0 0 6 16 0 0 0 6 18 0 0 0 6 19 0 0 0 6 20 0 0 0 7 8 0 0 0 7 9 -1 0 0 7 10 -1 0 0 7 21 0 0 0 8 19 0 1 0 8 20 0 0 0 8 21 0 0 0 8  
 22 0 0 0 9 12 0 0 0 9 18 1 0 0 9 20 1 0 0 10 11 0 0 0 10 13 0 0 0 10 21 1 0 0 10 23 0 0 0 10 24 0 0 0 11 14 0 0 0 11 16 0 0 1 11 17 0 0 0 11 24 0  
 0 0 12 13 0 0 0 12 20 1 0 0 12 21 1 0 0 12 23 1 1 -1 12 24 1 1 -1 13 14 0 0 0 13 15 0 0 1 13 21 1 0 0 13 23 0 0 0 14 15 0 0 1 14 16 0 0 1 14 17 0  
 0 0 15 16 0 0 0 15 17 0 0 0 15 22 0 -1 0 15 23 0 0 -1 16 19 0 0 0 16 24 0 0 -1 17 18 0 0 0 17 22 0 -1 0 18 19 0 0 0 18 20 0 0 0 18 22 0 -1 0 19 21  
 0 -1 0 19 22 0 -1 0 19 24 0 0 -1 20 22 0 0 0 20 23 0 1 -1 21 24 0 1 -1 22 23 0 1 -1 23 24 0 0

#### Gyroid2 - Information

Space group	<i>I4_132</i>
Unit cell lattice	(1.97747, 1.97747, 1.97747)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.01661, 0.26927, 0.3636)
Coordinates, edge 1	(0.01661, 0.26927, 0.3636) ↔ (0.48339, 0.26927, 0.6364)
Coordinates, edge 2	(0.01661, 0.26927, 0.3636) ↔ (0.1364, -0.01661, 0.76927)
Coordinates, edge 3	(0.01661, 0.26927, 0.3636) ↔ (0.3636, -0.01661, 0.23073)
Coordinates, edge 4	(0.01661, 0.26927, 0.3636) ↔ (0.01927, 0.26661, -0.1136)
Coordinates, edge 5	(0.01661, 0.26927, 0.3636) ↔ (-0.26661, 0.6136, 0.01927)
Shortest edge length	0.92705
Average edge length	1.00000
Longest edge length	1.11397
Shortest non-bonded distance	0.10062
Smallest angle between edges, degrees	42.41267
Average angle between edges, degrees	95.69890
Largest angle between edges, degrees	161.07216

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 5 1 0 0 2 9 0 0 0 2 10 0 0 0 2 11  
 0 0 0 3 7 0 0 0 3 1 0 0 0 3 1 2 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 4 6 0 0 0 4 1 1 0 0 0 4 1 5 0 0 0 4 1 6 0 0 0 4 1 7 0 0 0 5 6 0 0 0 5 8 0 0 0 5 9-1 0 0 5 11  
 -1 0 0 5 1 8 0 0 0 6 1 1 -1 0 0 6 1 5 0 0 0 6 1 9 0 0 0 6 2 0 0 0 0 7 8 0 0 0 7 1 3 1 -1 0 7 1 4 0 0 0 7 1 7 0 1 0 7 2 1 0 0 0 8 1 6 0 0 1 8 1 8 0 0 0 8 2 1 0 0 0  
 8 2 2 0 0 0 9 1 0 0 0 9 1 8 1 0 0 9 1 9 5 -1 -1 9 2 3 0 0 0 9 2 4 0 0 0 1 0 1 3 0 0 0 1 0 1 9 5 -1 -1 1 0 2 0 5 -1 -1 1 0 2 4 -3 1 1 1 1 1 4 0 -1 0 1 1 1 7 0 0 0 1 1  
 2 0 1 0 0 1 2 1 3 0 0 0 1 2 1 4 0 0 0 1 2 1 6 -1 2 0 1 2 1 7 -1 2 0 1 2 2 2 -1 2 -1 1 2 2 3 -7 3 2 1 3 1 7 -1 2 0 1 3 2 1 -1 1 0 1 3 2 4 -3 1 1 1 4 1 7 0 1 0 1 4 2 0 1 1  
 0 1 4 2 3 -7 3 2 1 5 1 6 0 0 0 1 5 1 8 0 0 -1 1 5 1 9 0 0 0 1 5 2 1 1 0 -2 1 5 2 2 1 0 -2 1 6 1 7 0 0 0 1 6 1 8 0 0 -1 1 6 2 2 0 0 -1 1 8 2 1 1 0 -1 1 8 2 4 -1 0 0 1 9  
 2 0 0 0 0 1 9 2 2 1 0 -2 1 9 2 3 -5 1 1 2 0 2 3 -8 2 2 2 0 2 4 -8 2 2 2 1 2 2 0 0 0 2 1 2 4 -2 0 1 2 2 2 3 -6 1 3 2 3 2 4 0 0 0

## Primitive - Information

Space group	<i>P432</i>
Unit cell lattice	(1.49073, 1.49073, 1.49073)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.20623, 0.28173, 0.21019)
Coordinates, edge 1	(0.20623, 0.28173, 0.21019) $\leftrightarrow$ (0.20623, -0.28173, 0.78981)
Coordinates, edge 2	(0.20623, 0.28173, 0.21019) $\leftrightarrow$ (-0.21019, -0.20623, 0.28173)
Coordinates, edge 3	(0.20623, 0.28173, 0.21019) $\leftrightarrow$ (0.28173, 0.78981, -0.20623)
Coordinates, edge 4	(0.20623, 0.28173, 0.21019) $\leftrightarrow$ (0.21019, 0.71827, 0.20623)
Coordinates, edge 5	(0.20623, 0.28173, 0.21019) $\leftrightarrow$ (0.71827, 0.79377, -0.21019)
Shortest edge length	0.65081
Average edge length	1.00000
Longest edge length	1.24820
Shortest non-bonded distance	0.15517
Smallest angle between edges, degrees	31.14332
Average angle between edges, degrees	98.66020
Largest angle between edges, degrees	170.79801

```

Primitive - Systre-key 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 2 1 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 2
1 1 0 0 0 3 7 0 0 0 3 1 1 0 0 3 1 2 0 0 3 1 3 0 0 3 1 4 0 0 4 7 0 0 0 4 8 0 0 0 4 9 -2 -1 0 4 1 1 -2 -1 0 4 1 5 0 0 0 5 6 0 0 0 5 1 0 0 0 5 1 6 0 0 0
5 1 7 0 0 0 5 1 8 0 0 0 6 8 0 0 0 6 1 4 1 0 0 6 1 6 0 1 0 6 1 7 0 0 0 6 1 9 0 0 0 7 1 1 -2 -1 0 7 1 2 0 0 0 7 2 0 0 0 0 7 2 1 0 0 0 8 1 3 0 0 1 8 1 5 0 0 0 8 1 9
0 0 0 8 2 2 0 0 0 9 1 0 0 0 9 1 5 2 1 0 9 2 0 5 3 -1 9 2 3 0 0 0 9 2 4 0 0 0 1 0 1 6 0 0 0 1 0 2 0 5 3 -1 1 0 2 1 5 3 -1 1 0 2 4 -4 -3 2 1 1 1 4 0 0 0 1 1 1 7 -1 0
0 1 1 2 1 2 1 0 1 2 1 3 0 0 0 1 2 1 5 0 0 -1 1 2 1 9 2 1 -3 1 2 2 0 0 0 1 2 2 2 1 -3 1 3 1 4 0 0 0 1 3 1 5 0 0 -1 1 3 1 8 -1 1 0 1 3 2 2 0 0 -1 1 4 1 6 -1 1 0 1 4 1 7
-1 0 0 1 4 1 8 -1 1 0 1 5 1 9 2 1 -2 1 5 2 4 -2 -1 0 1 6 1 8 0 0 0 1 6 1 9 0 -1 0 1 6 2 4 -4 -3 2 1 7 1 8 0 0 0 1 7 2 1 3 1 0 1 7 2 3 -6 -5 3 1 8 2 2 1 -1 -1 1 8 2 3 -6
-5 3 1 9 2 2 0 0 0 1 9 2 4 -4 -2 2 2 0 2 1 0 0 0 2 0 2 2 2 1 -3 2 0 2 3 -5 -3 1 2 1 2 3 -9 -6 3 2 1 2 4 -9 -6 3 2 2 2 3 -7 -4 4 2 3 2 4 0 0 0

```

**Delauney-Dress-symbol** <1.1:336:120 119 188 187 182 181 332 331 214 213 296 295 272 271 144 143 238 237 66 65 206 205 252 251  
 196 195 316 315 290 289 60 59 322 321 100 99 128 127 300 299 224 223 246 245 96 95 280 279 198 197 284 283 134 133 174 173 310 309  
 288 287 208 207 236 235 260 259 86 85 242 241 202 201 276 275 306 305 168 167 266 265 264 263 232 231 124 123 268 267 244 243 320  
 319 192 191 116 115 336 335 178 177 130 129 324 323 190 189 270 269 230 229 176 175 282 281 158 157 302 301 226 225 314 313 256 255  
 164 163 218 217 328 327 304 303 294 293 220 219 254 253 186 185 248 247 334 333 250 249 318 317 278 277 240 239 286 285 298 297 330  
 329 292 291 326 325 262 261 312 311 308 307,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63  
 65 67 69 84 73 75 77 79 81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137  
 139 154 143 145 147 149 151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203  
 205 207 209 224 213 215 217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269  
 271 273 275 277 279 294 283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333  
 335,2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92  
 94 96 98 100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158  
 160 162 164 166 168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224  
 226 228 230 232 234 236 238 240 242 244 246 248 250 252 254 256 258 260 262 264 266 268 270 272 274 276 278 280 282 284 286 288 290



**SI.4.8.** [3, 7] on 2223<sub>31</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.84589, 2.84589, 2.84589)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.12146, 0.12236, 0.37292)
Coordinates, edge 1	(0.12146, 0.12236, 0.37292) ↔ (0.12854, -0.12292, 0.12764)
Coordinates, edge 2	(0.12146, 0.12236, 0.37292) ↔ (0.37146, -0.12292, 0.37236)
Coordinates, edge 3	(0.12146, 0.12236, 0.37292) ↔ (-0.12764, 0.37146, 0.37708)
Coordinates, edge 4	(0.12146, 0.12236, 0.37292) ↔ (0.37854, 0.12236, 0.12708)
Coordinates, edge 5	(0.12146, 0.12236, 0.37292) ↔ (0.12236, -0.12708, 0.62146)
Shortest edge length	0.98738
Average edge length	1.00000
Longest edge length	1.01227
Shortest non-bonded distance	0.02104
Smallest angle between edges, degrees	58.86979
Average angle between edges, degrees	98.63839
Largest angle between edges, degrees	179.19773

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 5 0 0 0 3 10 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 6 0 0 0 4 12 0 0 0 4 16 0 0 0 4 17 0 0 0 4 18 0 0 0 5 8 0 0 0 5 13 0 0 0 5 18 1 0 0 5  
19 0 0 0 5 20 0 0 0 6 7 0 0 0 6 14 0 1 0 6 16 0 0 0 6 19 0 0 1 6 21 0 0 0 7 8 0 0 0 7 11 -1 1 -1 7 15 1 -1 2 7 21 0 0 0 7 22 0 0 0 8 9 -5 4 -7 8 17 -2  
1 -3 8 20 0 0 0 8 22 0 0 0 9 10 0 0 0 9 11 0 0 0 9 17 3 -3 4 9 20 5 -4 7 9 23 0 0 0 10 14 0 0 0 10 16 0 -1 0 10 20 5 -4 7 10 24 0 0 0 11 12 0 0 0 11  
15 2 -2 3 11 21 1 -1 1 11 23 0 0 0 12 13 -1 0 0 12 18 0 0 0 12 21 1 -1 1 12 24 -4 3 -5 13 15 0 0 0 13 18 1 0 0 13 22 -1 1 -2 13 24 -3 3 -5 14 15 0  
0 0 14 16 0 -1 0 14 19 0 -1 1 14 23 -2 2 -3 15 22 -1 1 -2 15 23 -2 2 -3 16 17 0 0 0 16 22 2 -1 3 16 24 0 1 0 17 18 0 0 0 17 22 2 -1 3 17 23 -3 3 -4  
18 19 -1 0 0 18 23 -3 3 -4 19 20 0 0 0 19 21 0 0 -1 19 23 -2 3 -4 20 21 0 0 -1 20 24 -5 4 -7 21 24 -5 4 -6 22 24 -2 2 -3

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.0622, 2.0622, 2.0622)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.05288, 0.15364, 0.45332)
Coordinates, edge 1	(0.05288, 0.15364, 0.45332) ↔ (0.40364, -0.19712, 0.29668)
Coordinates, edge 2	(0.05288, 0.15364, 0.45332) ↔ (0.40364, 0.19712, 0.20332)
Coordinates, edge 3	(0.05288, 0.15364, 0.45332) ↔ (-0.29668, 0.09636, 0.80288)
Coordinates, edge 4	(0.05288, 0.15364, 0.45332) ↔ (0.05288, -0.15364, 0.04668)
Coordinates, edge 5	(0.05288, 0.15364, 0.45332) ↔ (0.34636, 0.54668, 0.55288)
Shortest edge length	0.89278
Average edge length	1.00000
Longest edge length	1.07275
Shortest non-bonded distance	0.33088
Smallest angle between edges, degrees	49.27203
Average angle between edges, degrees	98.49179
Largest angle between edges, degrees	170.49682

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 5 0 0 0 3 10 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 7 0 0 0 4 12 0 0 0 4 16 0 0 0 4 17 0 0 0 4 18 0 0 0 5 8 0 0 0 5 14 0 0 0 5 18 1 0 0 5  
19 0 0 0 5 20 0 0 0 6 7 0 0 0 6 8 0 0 0 6 11 0 0 1 6 15 0 1 0 6 21 0 0 0 6 22 0 0 0 7 13 1 1 2 7 16 0 0 0 7 19 2 1 3 7 22 0 0 0 8 9 -5 -3 3 8 17 -3  
-2 -3 8 20 0 0 0 8 21 0 0 0 9 10 0 0 0 9 11 0 0 0 9 17 2 1 0 9 20 5 3 3 9 23 0 0 0 10 13 0 0 0 10 16 -1 -1 -2 10 20 5 3 3 10 24 0 0 0 11 12 0 0 0 11  
15 0 1 -1 1 1 22 0 0 -1 1 1 23 0 0 0 12 14 -1 0 0 12 18 0 0 0 12 22 0 0 -1 1 2 24 -3 -2 -1 1 3 15 0 0 0 13 16 -1 -1 -2 13 19 1 0 1 13 23 0 -1 1 14 15 0  
0 0 14 18 1 0 0 14 21 0 -1 0 14 24 -2 -2 -1 1 5 21 0 -1 0 15 23 0 -1 1 16 17 0 0 0 16 21 3 2 3 16 24 1 1 2 17 18 0 0 0 17 21 3 2 3 17 23 -2 -1 0 18  
19 -1 0 0 18 23 -2 -1 0 19 20 0 0 0 19 22 -2 -1 -3 19 23 -1 -1 0 20 22 -2 -1 -3 20 24 -5 -3 -3 21 24 -2 -1 -1 22 24 -3 -2 0

#### Gyroid2 - Information

Space group	<i>I4_132</i>
Unit cell lattice	(3.97891, 3.97891, 3.97891)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.09141, 0.20635, 0.29094)
Coordinates, edge 1	(0.09141, 0.20635, 0.29094) ↔ (-0.04094, 0.04365, 0.15859)
Coordinates, edge 2	(0.09141, 0.20635, 0.29094) ↔ (0.04094, 0.45635, 0.15859)
Coordinates, edge 3	(0.09141, 0.20635, 0.29094) ↔ (0.15859, 0.04094, 0.45635)
Coordinates, edge 4	(0.09141, 0.20635, 0.29094) ↔ (-0.09141, 0.29365, 0.29094)
Coordinates, edge 5	(0.09141, 0.20635, 0.29094) ↔ (0.20635, 0.29094, 0.09141)
Shortest edge length	0.80610
Average edge length	1.00000
Longest edge length	1.14329
Shortest non-bonded distance	1.34760
Smallest angle between edges, degrees	43.70846
Average angle between edges, degrees	97.16457
Largest angle between edges, degrees	162.33398

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 5 0 0 0 3 9 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 6 0 0 0 4 1 2 0 0 0 4 1 6 0 0 0 4 1 7 0 0 0 4 1 8 0 0 0 5 8 0 0 0 5 1 5 0 0 0 5 1 8 1 0 0 5  
1 9 0 0 0 5 2 0 0 0 0 6 7 0 0 0 6 1 3 0 1 0 6 1 6 0 0 0 6 1 9 -1 0 0 6 2 1 0 0 0 7 8 0 0 0 7 1 1 0 0 0 7 1 4 0 0 0 7 2 1 0 0 0 7 2 2 0 0 0 8 1 0 0 1 1 8 1 7 0 0 1  
8 2 0 0 0 0 8 2 2 0 0 0 9 1 0 0 0 9 1 3 0 0 0 9 1 6 0 -1 0 9 2 0 0 -1 -1 9 2 3 0 0 0 1 0 1 1 0 0 0 1 0 1 7 0 -1 0 1 0 2 0 0 -1 -1 1 0 2 4 0 0 0 1 1 1 2 0 0 0 1 1  
1 4 0 0 0 1 1 2 1 0 0 0 1 1 2 4 0 0 0 1 2 1 5 -1 0 0 1 2 1 8 0 0 0 1 2 2 1 0 0 0 1 2 2 3 -1 1 1 1 3 1 4 0 0 0 1 3 1 6 0 -1 0 1 3 1 9 -1 -1 0 1 3 2 4 0 0 0 1 4 1 5 0 0 0  
1 4 2 2 0 0 0 1 4 2 4 0 0 0 1 5 1 8 1 0 0 1 5 2 2 0 0 0 1 5 2 3 0 1 1 1 6 1 7 0 0 0 1 6 2 2 0 0 -1 1 6 2 3 0 1 0 1 7 1 8 0 0 0 1 7 2 2 0 0 -1 1 7 2 4 0 1 0 1 8 1 9 -1 0  
0 1 8 2 4 0 1 0 1 9 2 0 0 0 0 1 9 2 1 1 0 0 1 9 2 4 1 1 0 2 0 2 1 1 0 0 2 0 2 3 0 1 1 2 1 2 3 -1 1 1 2 2 2 3 0 1 1

#### Primitive - Information

Space group	<i>P432</i>
Unit cell lattice	(2.69894, 2.69894, 2.69894)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.07766, 0.37361, 0.30994)
Coordinates, edge 1	(0.07766, 0.37361, 0.30994) ↔ (-0.07766, 0.69006, 0.62639)
Coordinates, edge 2	(0.07766, 0.37361, 0.30994) ↔ (0.07766, 0.30994, 0.62639)
Coordinates, edge 3	(0.07766, 0.37361, 0.30994) ↔ (0.30994, 0.62639, 0.07766)
Coordinates, edge 4	(0.07766, 0.37361, 0.30994) ↔ (-0.07766, 0.62639, 0.30994)
Coordinates, edge 5	(0.07766, 0.37361, 0.30994) ↔ (0.30994, 0.07766, 0.37361)
Shortest edge length	0.80072
Average edge length	1.00000
Longest edge length	1.27853
Shortest non-bonded distance	0.48456
Smallest angle between edges, degrees	33.35605
Average angle between edges, degrees	92.35605
Largest angle between edges, degrees	168.38626

**Primitive - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 7 0 0 0 3 9 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 5 0 0 0 4 1 1 0 0 0 4 1 6 0 0 0 4 1 7 0 0 0 4 1 8 0 0 0 5 6 0 0 0 5 1 3 1 0 0 5 1 8 0 0 0 5  
1 9 0 0 0 5 2 0 0 0 0 6 8 0 0 0 6 1 2 0 1 0 6 1 4 0 0 0 6 1 9 0 0 0 6 2 1 0 0 0 7 8 0 0 0 7 1 5 0 0 0 7 1 7 1 1 1 7 2 0 0 0 1 7 2 2 0 0 0 8 1 0 1 0 1 8 1 6 1 0 1  
8 2 1 0 0 0 8 2 2 0 0 0 9 1 0 0 0 9 1 3 0 0 0 9 1 8 -1 0 0 9 2 2 -1 0 -1 9 2 3 0 0 0 1 0 1 2 0 0 0 1 0 1 6 0 0 0 1 0 2 2 -1 0 -1 1 0 2 4 0 0 0 1 1 1 2 0 0 0 1 1 1 5  
-1 -1 -1 1 1 1 7 0 0 0 1 1 1 9 0 -1 0 1 1 2 3 1 -1 0 1 2 1 4 0 -1 0 1 2 1 9 0 -1 0 1 2 2 4 0 0 0 1 3 1 4 0 0 0 1 3 1 8 -1 0 0 1 3 2 0 -1 0 0 1 3 2 4 0 1 0 1 4 1 5 0 0 0  
1 4 2 1 0 0 0 1 4 2 4 0 1 0 1 5 1 7 1 1 1 5 2 1 0 0 0 1 5 2 3 2 0 1 1 1 6 1 7 0 0 0 1 6 1 8 0 0 0 1 6 2 1 -1 0 -1 1 6 2 4 0 0 0 1 7 2 0 -1 -1 0 1 7 2 4 0 0 0 1 8 2 1 -1 0  
-1 1 8 2 3 1 0 0 1 9 2 0 0 0 0 1 9 2 2 0 0 -1 1 9 2 3 1 0 0 2 0 2 2 0 0 -1 2 0 2 4 1 1 0 2 1 2 3 2 0 1 2 2 3 1 0 1

**Delauney-Dress-symbol** <1.1:336:124 123 304 303 288 287 336 335 102 101 172 171 260 259 292 291 300 299 36 35 240 239 144 143 44  
43 230 229 320 319 108 107 242 241 298 297 94 93 204 203 142 141 130 129 314 313 114 113 256 255 232 231 330 329 194 193 198 197  
236 235 266 265 268 267 248 247 150 149 276 275 98 97 308 307 120 119 186 185 160 159 274 273 180 179 224 223 206 205 296 295 174  
173 334 333 244 243 318 317 140 139 312 311 188 187 306 305 258 257 316 315 154 153 156 214 213 176 175 252 251 278 277 158 157  
184 183 326 325 284 283 216 215 262 261 212 211 272 271 310 309 200 199 328 327 322 321 222 221 238 237 282 281 226 225 294 293 254  
253 332 331 280 279 270 269 324 323 302 301,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63  
65 67 69 84 73 75 77 79 81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137  
139 154 143 145 147 149 151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203  
205 207 209 224 213 215 217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269  
271 273 275 277 279 294 283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333  
335,2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92  
94 96 98 100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158  
160 162 164 166 168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224  
226 228 230 232 234 236 238 240 242 244 246 248 250 252 254 256 260 262 264 266 268 270 272 274 276 280 282 284 286 288 290



**SI.4.9.** [3, 7] on 2223<sub>32</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.73639, 2.73639, 2.73639)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.10796, 0.34709, 0.14035)
Coordinates, edge 1	(0.10796, 0.34709, 0.14035) ↔ (-0.10965, 0.40291, 0.35796)
Coordinates, edge 2	(0.10796, 0.34709, 0.14035) ↔ (0.14204, -0.10965, 0.09709)
Coordinates, edge 3	(0.10796, 0.34709, 0.14035) ↔ (0.10796, 0.15291, 0.35965)
Coordinates, edge 4	(0.10796, 0.34709, 0.14035) ↔ (0.35965, 0.10796, 0.15291)
Coordinates, edge 5	(0.10796, 0.34709, 0.14035) ↔ (0.14204, 0.10965, -0.09709)
Shortest edge length	0.80154
Average edge length	1.00000
Longest edge length	1.25888
Shortest non-bonded distance	0.15544
Smallest angle between edges, degrees	39.31559
Average angle between edges, degrees	79.22262
Largest angle between edges, degrees	139.20941

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 6 0 0 0 2 6 0 1 0 2 8 0 0 0 2 9 0 0 0 2 1 0 0 0 3 4 0 0 0 3 5 -1 0 0 3 7 -1 0 0 3 9 0 0 0 4 5 -1 0 0 4 5 0 0 0 4 1 1 0 0 0 4 1 2 0 0 0 4 1 3 0 0 0 5 1 1 0 0 0 5 1 3 1 0 0 5 1 4 0 0 0 6 7 0 0 0 6 8 0 -1 0 6 9 0 -1 0 6 1 0 0 0 7 9 0 -1 0 7 9 1 0 0 7 1 5 0 0 0 7 1 6 0 0 0 8 1 0 0 0 8 1 0 1 0 8 1 7 0 0 0 8 1 8 0 0 0 8 1 9 0 0 0 9 1 5 -1 0 0 9 1 6 0 1 0 1 0 1 7 0 -1 0 1 0 1 9 0 0 0 1 0 2 0 0 0 0 1 1 1 2 0 0 0 1 1 1 4 0 0 0 1 1 1 2 1 0 0 0 1 1 2 2 0 0 0 1 2 1 3 0 0 0 1 2 1 4 0 0 -1 1 2 2 1 0 0 -1 1 2 2 2 0 0 0 1 3 1 4 -1 0 0 1 3 1 4 0 0 -1 1 3 1 7 1 -1 -1 1 3 1 8 0 -1 0 1 4 1 7 1 -1 0 1 4 1 8 1 -1 0 1 5 1 6 0 0 0 1 5 1 6 1 1 0 1 5 2 1 0 0 -1 1 5 2 3 0 0 0 1 5 2 4 0 0 0 1 6 2 1 -1 1 1 1 1 6 2 2 -1 -1 0 1 6 2 4 0 0 0 1 7 1 8 -1 0 1 1 7 1 8 0 0 0 1 7 2 0 0 1 0 1 8 1 9 0 0 0 1 8 2 0 1 1 -1 1 9 2 0 0 0 1 9 2 0 1 1 -1 1 9 2 3 0 1 0 1 9 2 4 1 2 -1 2 0 2 3 0 1 0 2 0 2 4 0 1 0 2 1 2 2 0 0 0 2 1 2 2 3 0 0 1 2 2 2 3 0 0 1 2 2 2 4 1 1 0 2 3 2 4 0 0 0 2 3 2 4 1 1 -1

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.76441, 1.76441, 1.76441)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.15901, 0.37777, 0.30798)
Coordinates, edge 1	(0.15901, 0.37777, 0.30798) ↔ (-0.12777, 0.09099, 0.94202)
Coordinates, edge 2	(0.15901, 0.37777, 0.30798) ↔ (0.09099, -0.05798, 0.87223)
Coordinates, edge 3	(0.15901, 0.37777, 0.30798) ↔ (0.15901, 0.62223, 0.19202)
Coordinates, edge 4	(0.15901, 0.37777, 0.30798) ↔ (0.30798, 0.15901, 0.37777)
Coordinates, edge 5	(0.15901, 0.37777, 0.30798) ↔ (0.09099, 1.05798, -0.37223)
Shortest edge length	0.47738
Average edge length	1.00000
Longest edge length	1.70152
Shortest non-bonded distance	0.25228
Smallest angle between edges, degrees	7.43085
Average angle between edges, degrees	99.25229
Largest angle between edges, degrees	168.01622

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 2 -1 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 6 0 0 0 2 6 0 2 -5 2 8 0 0 0 2 9 0 0 0 2 1 0 0 0 3 4 -2 1 0 3 5 0 0 0 3 7 -2 1 0 3 1 0 0 0 4 5 0 0 0 4 5 2 -1 0 4 1 1 0 0 0 4 1 2 0 0 0 4 1 3 0 0 0 5 1 1 0 0 0 5 1 3 -2 1 0 5 1 4 0 0 0 6 7 0 0 0 6 8 0 -2 5 6 9 0 0 0 6 1 0 0 -2 5 7 1 0 0 -2 5 7 1 0 2 -1 0 7 1 5 0 0 0 7 1 6 0 0 0 8 9 0 0 0 8 9 0 2 -5 8 1 7 0 0 0 8 1 8 0 0 0 8 1 9 0 0 0 9 1 7 0 -2 5 9 1 9 0 0 9 2 0 0 0 0 1 0 1 5 -2 1 0 1 0 1 6 0 2 -5 1 1 1 2 0 0 0 1 1 1 4 0 0 0 1 1 1 4 0 0 1 1 1 2 1 0 0 0 1 1 2 2 0 0 0 1 2 1 3 -2 1 1 1 2 1 3 0 0 0 1 2 1 4 0 0 1 1 2 1 7 3 -4 6 1 2 1 8 3 -4 6 1 3 1 4 2 -1 0 1 3 1 7 5 -5 5 1 3 1 8 3 -4 6 1 4 2 1 0 0 -1 1 4 2 2 0 0 0 1 5 1 6 0 0 0 1 5 1 6 2 1 -5 1 5 2 1 -1 0 0 1 5 2 3 0 0 0 1 5 2 4 0 0 0 1 6 2 1 -2 1 -3 1 5 1 6 2 2 -3 -1 6 1 6 2 4 0 0 0 1 7 1 8 -2 1 1 1 7 1 8 0 0 0 1 7 2 0 0 2 -5 1 8 1 9 0 0 0 1 8 2 0 2 1 -6 1 9 2 0 0 0 1 9 2 0 2 1 -6 1 9 2 3 1 3 -9 1 9 2 4 3 4 -1 5 2 0 2 3 1 3 -9 2 0 2 4 1 3 -9 2 1 2 2 0 0 0 2 1 2 2 3 1 0 0 2 2 2 3 1 0 0 2 2 2 4 3 1 -6 2 3 2 4 0 0 0 2 3 2 4 2 1 -6

#### Gyroid2 - Information

Space group	<i>I4<sub>1</sub>32</i>
Unit cell lattice	(5.24259, 5.24259, 5.24259)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.02245, 0.1662, 0.04978)
Coordinates, edge 1	(0.02245, 0.1662, 0.04978) ↔ (-0.02245, 0.3338, 0.04978)
Coordinates, edge 2	(0.02245, 0.1662, 0.04978) ↔ (0.0838, 0.22755, 0.20022)
Coordinates, edge 3	(0.02245, 0.1662, 0.04978) ↔ (0.22755, 0.20022, 0.0838)
Coordinates, edge 4	(0.02245, 0.1662, 0.04978) ↔ (-0.0838, 0.27245, 0.20022)
Coordinates, edge 5	(0.02245, 0.1662, 0.04978) ↔ (0.04978, 0.02245, 0.1662)
Shortest edge length	0.90963
Average edge length	1.00000
Longest edge length	1.11472
Shortest non-bonded distance	1.38705
Smallest angle between edges, degrees	51.36968
Average angle between edges, degrees	87.88981
Largest angle between edges, degrees	143.16010

## **Primitive - Information**

Space group	P432
Unit cell lattice	(1.46281, 1.46281, 1.46281)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.16297, 0.42968, 0.44322)
Coordinates, edge 1	(0.16297, 0.42968, 0.44322) ↔ (0.44322, -0.42968, 0.16297)
Coordinates, edge 2	(0.16297, 0.42968, 0.44322) ↔ (0.57032, -0.16297, 0.55678)
Coordinates, edge 3	(0.16297, 0.42968, 0.44322) ↔ (-0.16297, 0.57032, 0.44322)
Coordinates, edge 4	(0.16297, 0.42968, 0.44322) ↔ (0.55678, 0.16297, 0.57032)
Coordinates, edge 5	(0.16297, 0.42968, 0.44322) ↔ (-0.57032, 1.16297, 0.55678)
Shortest edge length	0.51930
Average edge length	1.00000
Longest edge length	1.52606
Shortest non-bonded distance	0.18698
Smallest angle between edges, degrees	10.75469
Average angle between edges, degrees	98.21464
Largest angle between edges, degrees	161.63874

**SI.4.10.** [3, 7] on 2223<sub>41</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.63488, 2.63488, 2.63488)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.07352, 0.34699, 0.0996)
Coordinates, edge 1	(0.07352, 0.34699, 0.0996) ↔ (0.32352, 0.6504, 0.09699)
Coordinates, edge 2	(0.07352, 0.34699, 0.0996) ↔ (0.0996, 0.07352, 0.34699)
Coordinates, edge 3	(0.07352, 0.34699, 0.0996) ↔ (0.3496, 0.40301, -0.17648)
Coordinates, edge 4	(0.07352, 0.34699, 0.0996) ↔ (-0.32352, 0.3496, 0.09699)
Coordinates, edge 5	(0.07352, 0.34699, 0.0996) ↔ (-0.07352, 0.65301, 0.0996)
Shortest edge length	0.89457
Average edge length	1.00000
Longest edge length	1.04621
Shortest non-bonded distance	0.26150
Smallest angle between edges, degrees	50.88713
Average angle between edges, degrees	101.09590
Largest angle between edges, degrees	169.84187

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
 12 0 0 0 3 6 0 0 0 3 11 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 5 0 0 0 4 8 0 0 0 4 15 1 0 0 4 16 0 0 0 4 17 0 0 0 4 18 0 0 0 5 12 0 0 0 5 18 0 0 0 5  
 19 0 0 0 5 2 0 0 0 0 6 7 0 0 0 6 10 0 1 0 6 14 0 0 0 6 16 0 0 1 6 21 0 0 0 7 8 0 0 0 7 12 1 3 -2 7 16 0 0 1 7 19 1 3 -2 7 2 2 0 0 0 8 13 4 5 -3 8 14 4 5  
 -3 8 17 0 0 0 8 19 1 3 -2 9 10 0 0 0 9 11 0 0 0 9 14 0 -1 0 9 19 -3 -3 1 9 20 -3 -3 1 9 23 0 0 0 10 12 0 0 0 10 14 0 -1 0 10 21 0 -1 0 10 24 0 0 0 11  
 15 0 0 0 11 18 -1 0 0 11 23 0 0 0 11 24 2 4 -3 12 19 0 0 0 12 22 -1 -3 2 12 24 0 0 0 13 14 0 0 0 13 15 0 0 0 13 17 -4 -5 3 13 21 -1 0 -1 13 23 -3  
 -3 2 14 19 -3 -2 1 15 16 -1 0 0 15 18 -1 0 0 15 21 -1 0 -1 16 17 0 0 0 16 21 0 0 -1 16 22 0 0 -1 17 20 -2 -1 0 17 22 0 0 -1 17 23 1 2 -1 18 20 0 0  
 0 18 22 2 1 -1 18 24 3 4 -3 19 20 0 0 20 22 2 1 -1 20 23 3 3 -1 21 23 -2 -3 3 21 24 0 1 0 22 24 1 3 -2 23 24 2 4 -3

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.94862, 1.94862, 1.94862)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.02059, 0.19399, 0.39903)
Coordinates, edge 1	(0.02059, 0.19399, 0.39903) ↔ (0.44399, 0.22941, 0.14903)
Coordinates, edge 2	(0.02059, 0.19399, 0.39903) ↔ (0.30601, 0.60097, 0.52059)
Coordinates, edge 3	(0.02059, 0.19399, 0.39903) ↔ (-0.35097, 0.05601, 0.77059)
Coordinates, edge 4	(0.02059, 0.19399, 0.39903) ↔ (0.05601, 0.22941, -0.14903)
Coordinates, edge 5	(0.02059, 0.19399, 0.39903) ↔ (0.02059, -0.19399, 0.10097)
Shortest edge length	0.95338
Average edge length	1.00000
Longest edge length	1.07243
Shortest non-bonded distance	0.23256
Smallest angle between edges, degrees	55.60349
Average angle between edges, degrees	100.98828
Largest angle between edges, degrees	162.26588

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
 12 0 0 0 3 5 0 0 0 3 10 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 6 0 0 0 4 12 0 0 0 4 16 0 0 0 4 17 0 0 0 4 18 0 0 0 5 15 0 0 0 5 18 1 0 0 5  
 19 0 0 0 5 2 0 0 0 0 6 7 0 0 0 6 9 0 0 1 6 16 0 0 0 6 19 0 1 0 6 21 0 0 0 7 8 0 0 0 7 10 1 -1 2 7 13 1 -1 2 7 19 0 1 0 7 2 2 0 0 0 8 13 1 -1 2 8 16 7 -2  
 5 8 17 7 -2 5 8 2 0 0 0 9 10 0 0 0 9 11 0 0 0 9 16 0 0 -1 9 2 1 0 0 -1 9 23 0 0 0 10 13 0 0 0 10 2 2 -1 1 -2 10 2 3 0 0 0 11 12 0 0 0 11 13 -6 1 -4 11  
 14 -6 1 -4 11 16 0 0 -1 11 2 4 0 0 0 12 15 -1 0 0 12 18 0 0 0 12 2 3 -2 3 12 2 4 0 0 0 13 14 0 0 0 13 16 6 -1 3 14 15 0 0 0 14 2 0 3 0 1 14 2 2 3 -1  
 1 14 2 4 6 -1 4 15 18 1 0 0 15 2 2 3 -1 1 15 2 3 4 -2 3 16 17 0 0 0 17 18 0 0 0 17 2 0 -7 2 -5 17 2 1 -1 0 17 2 4 -4 1 -2 18 19 -1 0 0 18 2 1 -1 0  
 19 2 0 0 0 19 2 1 0 -1 0 19 2 2 0 -1 0 2 0 2 2 3 -1 3 2 1 2 3 0 0 1 2 1 2 4 -3 2 -2 2 2 3 1 -1 2 2 3 2 4 -3 2 -3

#### Gyroid2 - Information

Space group	<i>I4_132</i>
Unit cell lattice	(3.76606, 3.76606, 3.76606)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.10437, 0.24579, 0.30786)
Coordinates, edge 1	(0.10437, 0.24579, 0.30786) ↔ (0.05786, 0.49579, 0.14563)
Coordinates, edge 2	(0.10437, 0.24579, 0.30786) ↔ (0.24579, 0.30786, 0.10437)
Coordinates, edge 3	(0.10437, 0.24579, 0.30786) ↔ (0.14563, 0.05786, 0.49579)
Coordinates, edge 4	(0.10437, 0.24579, 0.30786) ↔ (0.05786, 0.50421, 0.35437)
Coordinates, edge 5	(0.10437, 0.24579, 0.30786) ↔ (-0.10437, 0.25421, 0.30786)
Shortest edge length	0.78673
Average edge length	1.00000
Longest edge length	1.13595
Shortest non-bonded distance	1.25471
Smallest angle between edges, degrees	42.58135
Average angle between edges, degrees	100.90750
Largest angle between edges, degrees	168.12278
<b>Gyroid2 - Systre-key</b>	3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 5 0 0 0 3 1 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 6 0 0 0 4 1 2 0 0 0 4 1 4 1 0 0 4 1 6 0 0 0 4 1 7 0 0 0 5 8 0 0 0 5 9 0 1 0 5 1 4 0 0 0 5 1 8 0 0 0 5 1 9 0 0 0 6 7 0 0 0 6 1 0 0 0 1 6 1 3 0 0 1 6 1 6 0 0 0 6 2 0 0 0 7 8 0 0 0 7 1 3 0 0 1 7 1 9 1 0 0 7 2 1 0 0 0 7 2 2 0 0 0 8 9 0 1 0 8 1 1 0 1 0 8 1 7 0 1 -1 8 2 1 0 0 0 9 1 0 0 0 9 1 1 0 0 0 9 1 9 0 -1 0 9 2 2 -1 -1 0 1 0 1 3 0 0 0 1 0 2 0 0 0 -1 1 0 2 2 -1 -1 0 1 1 1 2 0 0 0 1 1 1 7 0 0 -1 1 1 1 8 1 0 -1 1 1 2 3 0 0 0 1 2 1 4 1 0 0 1 2 1 5 1 0 0 1 2 2 0 1 1 -1 1 2 2 3 0 0 0 1 3 1 5 0 0 0 1 3 1 9 1 0 -1 1 3 2 4 0 0 0 1 4 1 5 0 0 0 1 4 1 7 -1 0 0 1 4 1 8 0 0 0 1 5 1 6 0 1 -1 1 5 2 0 0 1 -1 1 5 2 4 0 0 0 1 6 1 7 0 0 0 1 6 2 0 0 0 1 6 2 1 0 -1 1 1 6 2 4 0 -1 1 1 7 1 8 1 0 0 1 7 2 1 0 -1 1 1 8 1 9 0 0 0 1 8 2 3 -1 0 1 1 8 2 4 -1 0 1 1 9 2 2 -1 0 0 1 9 2 4 -1 0 1 2 0 2 2 -1 -1 1 2 1 2 2 0 0 0 2 1 2 3 0 0 0 2 1 2 4 0 0 0 2 2 2 3 0 0 0 2 3 2 4 0 0 0

#### Primitive - Information

RCSR-ID	<b>snv-x</b>
Space group	<i>P432</i>
Unit cell lattice	(3.12212, 3.12212, 3.12212)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.13448, 0.39857, 0.29742)
Coordinates, edge 1	(0.13448, 0.39857, 0.29742) ↔ (0.13448, 0.29742, 0.60143)
Coordinates, edge 2	(0.13448, 0.39857, 0.29742) ↔ (0.29742, 0.13448, 0.39857)
Coordinates, edge 3	(0.13448, 0.39857, 0.29742) ↔ (0.29742, 0.60143, 0.13448)
Coordinates, edge 4	(0.13448, 0.39857, 0.29742) ↔ (-0.13448, 0.29742, 0.39857)
Coordinates, edge 5	(0.13448, 0.39857, 0.29742) ↔ (-0.13448, 0.60143, 0.29742)
Shortest edge length	0.95111
Average edge length	1.00000
Longest edge length	1.05179
Shortest non-bonded distance	1.41463
Smallest angle between edges, degrees	55.15557
Average angle between edges, degrees	100.00986
Largest angle between edges, degrees	152.35097

<b>Primitive - Systre-key</b>	3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 4 0 0 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 6 0 0 0 3 7 0 0 0 3 1 1 1 0 0 3 1 2 1 0 0 3 1 3 0 0 0 3 1 4 0 0 0 4 7 0 0 0 4 1 1 0 0 0 4 1 5 0 0 0 4 1 6 0 0 0 4 1 7 0 0 0 5 8 0 0 0 5 9 0 0 0 5 1 5 0 1 0 5 1 8 0 0 0 5 1 9 0 0 0 6 8 0 0 0 6 1 2 1 0 0 6 1 9 1 0 0 6 2 0 0 0 6 2 1 0 0 0 7 9 0 0 1 7 1 4 0 0 0 7 1 7 0 0 0 7 2 2 0 0 0 8 1 5 0 1 0 8 1 6 0 1 0 8 2 1 0 0 0 8 2 2 0 0 0 9 1 0 0 0 9 1 7 0 0 -1 9 1 8 0 0 0 9 2 2 0 0 -1 1 0 1 2 0 0 0 1 0 1 3 -1 0 -1 1 0 1 4 -1 0 -1 1 0 1 7 0 0 -1 1 0 2 3 0 0 0 1 1 1 2 0 0 0 1 1 1 3 -1 0 0 1 1 1 5 0 0 0 1 1 2 0 -1 -1 0 1 2 1 9 0 0 0 1 2 2 3 0 0 0 1 3 1 4 0 0 0 1 3 1 7 1 0 0 1 3 2 0 0 -1 0 1 3 2 4 0 0 0 1 4 2 1 0 0 0 1 4 2 2 0 0 0 1 4 2 3 1 0 1 1 5 1 6 0 0 0 1 5 1 9 0 -1 0 1 5 2 0 -1 -1 0 1 6 1 7 0 0 0 1 6 1 8 0 -1 1 1 6 2 2 0 -1 0 1 6 2 4 -1 0 0 1 7 2 4 -1 0 0 1 8 1 9 0 0 0 1 8 2 2 0 0 -1 1 8 2 3 0 0 0 1 8 2 4 -1 1 -1 1 9 2 0 -1 0 0 1 9 2 3 0 0 0 2 0 2 1 0 0 0 2 0 2 4 0 1 0 2 1 2 2 0 0 0 2 1 2 3 1 0 1 2 1 2 4 0 1 0 2 3 2 4 -1 1 -1
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<b>Delauney-Dress-symbol</b>	<1.1:336:184 183 62 61 300 299 128 127 326 325 22 21 160 159 170 169 270 269 162 161 324 323 32 31 258 257 260 259 336 335 72 71 116 115 190 189 146 145 204 203 278 277 224 223 238 237 290 289 308 307 104 103 180 179 302 301 196 195 312 311 214 213 274 273 334 333 112 111 86 85 232 231 246 245 118 117 110 109 174 173 254 253 320 319 294 293 234 233 332 331 206 205 306 305 176 175 192 191 244 243 134 133 284 283 316 315 298 297 286 285 242 241 210 209 328 327 220 219 262 261 188 187 156 155 250 249 228 227 186 185 268 267 200 199 252 251 256 255 304 303 272 271 314 313 240 239 280 279 330 329 276 275 310 309 264 263 226 225 248 247 292 291 322 321 318 317 296 295,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63 65 67 69 84 73 75 77 79 81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137 139 154 143 145 147 149 151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203 205 207 209 224 213 215 217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269 271 273 275 277 279 294 283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333 335,2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164 166 168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224 226 228 230 232 234 236 238 240 242 244 246 248 250 252 254 256 258 260 262 264 266 268 270 272 274 276 278 280 282 284 286 288 290 292 294 296
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**SI.4.11.** [3, 7] on 23 $\times$ 7.

#### Diamond - Information

RCSR-ID	<b>svu</b>
Space group	$Fd\bar{3}$
Unit cell lattice	(5.37651, 5.37651, 5.37651)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.032, 0.125, 0.27547)
Coordinates, edge 1	(0.032, 0.125, 0.27547) $\leftrightarrow$ (0.125, 0.27547, 0.218)
Coordinates, edge 2	(0.032, 0.125, 0.27547) $\leftrightarrow$ (0.218, 0.125, 0.27547)
Coordinates, edge 3	(0.032, 0.125, 0.27547) $\leftrightarrow$ (0.02547, 0.282, 0.375)
Coordinates, edge 4	(0.032, 0.125, 0.27547) $\leftrightarrow$ (0.125, -0.02547, 0.218)
Shortest edge length	0.99994
Average edge length	1.00000
Longest edge length	1.00004
Shortest non-bonded distance	1.41419
Smallest angle between edges, degrees	59.99459
Average angle between edges, degrees	94.24406
Largest angle between edges, degrees	149.97523

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 5 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2  
 1 1 0 0 0 3 6 0 0 0 3 9 0 0 0 3 1 2 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 4 7 0 0 0 4 8 0 0 0 4 1 0 0 0 0 4 1 5 0 0 0 5 7 0 0 0 5 1 1 0 0 0 5 1 6 0 0 0 5  
 1 7 0 0 0 5 1 8 0 0 0 6 8 0 0 0 6 1 3 0 0 0 6 1 4 0 0 0 6 1 9 0 0 0 6 2 0 0 0 0 7 1 1 0 0 0 7 1 8 0 0 0 7 1 9 1 0 0 7 2 1 0 0 0 8 1 5 0 0 0 8 1 7 0 1 0 8 2 0 0 0  
 0 8 2 2 0 0 0 9 1 0 0 0 0 9 1 3 0 0 0 9 1 8 0 0 1 9 2 3 0 0 0 9 2 4 0 0 0 1 0 1 5 0 0 0 1 0 2 1 0 0 1 1 0 2 3 0 0 0 1 0 2 4 0 0 0 1 1 1 2 1 0 0 1 1 1 6 0 0 0 1 1 1 9 1  
 0 0 1 2 1 3 0 0 0 1 2 1 4 0 0 0 1 2 1 6 -1 0 0 1 2 1 9 0 0 0 1 2 2 2 -1 -1 0 1 3 1 9 0 0 0 1 3 2 0 0 0 0 1 3 2 4 0 0 0 1 4 1 9 0 0 0 1 4 2 1 -1 0 0 1 4 2 2 -1 -1 0 1 4  
 2 3 -1 0 -1 1 5 1 6 0 1 0 1 5 2 0 0 0 0 1 5 2 2 0 0 0 1 5 2 4 0 0 0 1 6 1 7 0 0 0 1 6 2 0 0 -1 0 1 6 2 2 0 -1 0 1 7 1 8 0 0 0 1 7 2 0 0 -1 0 1 7 2 2 0 -1 0 1 7 2 3 0 0  
 -1 1 8 2 1 0 0 0 1 8 2 3 0 0 -1 1 8 2 4 0 0 -1 1 9 2 1 -1 0 0 2 0 2 4 0 0 0 2 1 2 3 0 0 -1 2 1 2 4 0 0 -1 2 2 2 3 0 1 -1

#### Gyroid1 - Information

Space group	$I2_{13}$
Unit cell lattice	(2.19361, 2.19361, 2.19361)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.08117, 0.45151, 0.24017)
Coordinates, node 2	(0.14086, 0.25631, 0.49204)
Coordinates, edge 1	(0.08117, 0.45151, 0.24017) $\leftrightarrow$ (-0.08117, 0.04849, 0.24017)
Coordinates, edge 2	(0.08117, 0.45151, 0.24017) $\leftrightarrow$ (0.50796, 0.35914, 0.25631)
Coordinates, edge 3	(0.14086, 0.25631, 0.49204) $\leftrightarrow$ (-0.24369, -0.00796, 0.64086)
Coordinates, edge 4	(0.14086, 0.25631, 0.49204) $\leftrightarrow$ (0.00796, -0.14086, 0.75631)
Coordinates, edge 5	(0.08117, 0.45151, 0.24017) $\leftrightarrow$ (0.24369, 0.50796, 0.64086)
Coordinates, edge 6	(0.08117, 0.45151, 0.24017) $\leftrightarrow$ (0.25983, 0.08117, 0.54849)
Coordinates, edge 7	(0.14086, 0.25631, 0.49204) $\leftrightarrow$ (-0.14086, 0.24369, 0.49204)
Coordinates, edge 8	(0.08117, 0.45151, 0.24017) $\leftrightarrow$ (0.04849, 0.75983, 0.58117)
Shortest edge length	0.61860
Average edge length	1.00000
Longest edge length	1.12738
Shortest non-bonded distance	0.21707
Smallest angle between edges, degrees	25.67196
Average angle between edges, degrees	72.94426
Largest angle between edges, degrees	145.66083

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 4 0 0 0 2 5 0 0 0 2 7 1 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1  
 0 0 0 3 6 0 0 0 3 7 0 0 0 3 1 2 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 8 0 0 0 4 1 0 0 0 0 4 1 6 0 0 0 4 1 7 0 0 0 4 1 8 0 0 0 5 6 0 0 0 5 1 1 0 0 0 5 1 9  
 0 0 0 5 2 0 0 0 0 5 2 1 0 0 0 6 1 2 0 1 0 6 1 5 0 0 0 6 1 6 0 1 0 6 1 9 0 0 0 7 8 0 0 0 7 9 -1 0 0 7 1 0 -1 0 0 7 1 3 0 0 0 8 1 0 -1 0 0 8 1 8 0 0 0 8 2 0 -1 0 0  
 8 2 2 0 0 0 9 1 1 0 0 0 9 1 3 1 0 0 9 1 7 1 0 0 9 2 3 0 0 0 9 2 4 0 0 0 1 0 1 4 0 0 0 1 0 1 6 0 0 0 1 0 2 2 1 0 0 1 1 1 9 -1 0 1 1 1 2 1 0 0 0 1 1 2 2 0 0 1 1 1 2 4 0  
 0 0 1 2 1 3 0 0 0 1 2 1 4 0 0 0 1 2 1 6 0 0 0 1 2 1 9 0 -1 0 1 2 2 4 1 -1 -1 1 3 1 8 2 -1 -1 1 3 2 3 -1 0 0 1 3 2 4 1 -1 -1 1 4 1 5 0 0 0 1 4 1 6 0 0 0 1 4 2 1 1 0 -1  
 1 4 2 2 1 0 0 1 5 1 6 0 1 0 1 5 1 7 0 1 0 1 5 2 1 1 0 -1 1 5 2 3 -1 1 0 1 6 1 7 0 0 0 1 7 1 8 0 0 0 1 7 2 3 -1 0 0 1 7 2 4 -1 0 0 1 8 2 0 -1 0 0 1 8 2 3 -3 1 1 1 8 2 4 -1  
 0 0 1 9 2 0 0 0 0 1 9 2 2 1 0 0 1 9 2 4 1 0 -1 2 0 2 1 0 0 0 2 0 2 2 1 0 0 2 0 2 3 -2 1 1 2 1 2 2 0 0 1 2 1 2 3 -2 1 1

#### Gyroid2 - Information

Space group	<i>I</i> 2 <sub>1</sub> 3
Unit cell lattice	(2.09714, 2.09714, 2.09714)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.14195, 0.2433, 0.35003)
Coordinates, node 2	(0.13715, 0.46053, 0.27492)
Coordinates, edge 1	(0.14195, 0.2433, 0.35003) ↔ (0.14195, 0.7567, 0.14997)
Coordinates, edge 2	(0.14195, 0.2433, 0.35003) ↔ (-0.22508, 0.36285, 0.53947)
Coordinates, edge 3	(0.13715, 0.46053, 0.27492) ↔ (-0.22508, 0.63715, -0.03947)
Coordinates, edge 4	(0.13715, 0.46053, 0.27492) ↔ (0.22508, 0.86285, -0.03947)
Coordinates, edge 5	(0.14195, 0.2433, 0.35003) ↔ (0.13715, 0.53947, 0.22508)
Coordinates, edge 6	(0.14195, 0.2433, 0.35003) ↔ (0.2567, 0.35003, -0.14195)
Coordinates, edge 7	(0.13715, 0.46053, 0.27492) ↔ (0.36285, 0.46053, 0.72508)
Coordinates, edge 8	(0.14195, 0.2433, 0.35003) ↔ (0.2567, 0.64997, 0.64195)
Shortest edge length	0.67419
Average edge length	1.00000
Longest edge length	1.15552
Shortest non-bonded distance	0.19577
Smallest angle between edges, degrees	1.80064
Average angle between edges, degrees	75.95750
Largest angle between edges, degrees	150.16837

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 4 0 0 0 2 5 0 0 0 2 7 1 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1  
0 0 0 3 6 0 0 0 3 7 0 0 0 3 1 2 0 0 0 3 1 3 0 0 0 3 1 4 0 0 0 3 1 5 0 0 0 4 8 0 0 0 4 1 0 0 0 4 1 6 0 0 0 4 1 7 0 0 0 4 1 8 0 0 0 5 6 0 0 0 5 1 1 0 0 0 5 1 9  
0 0 0 5 2 0 0 0 0 5 2 1 0 0 0 6 1 2 0 1 0 6 1 5 0 0 0 6 1 6 0 1 0 6 1 9 0 0 0 7 8 0 0 0 7 9 -1 0 0 7 1 0 -1 0 0 7 1 3 0 0 0 8 1 0 -1 0 0 8 1 8 0 0 0 8 2 0 -1 0 0  
8 2 2 0 0 0 9 1 1 0 0 0 9 1 3 1 0 0 9 1 7 1 0 0 9 2 3 0 0 0 9 2 4 0 0 0 1 0 1 4 0 0 0 1 0 1 6 0 0 0 1 0 2 2 1 0 0 1 1 1 9 -1 0 1 1 1 2 1 0 0 0 1 1 2 2 0 0 1 1 1 2 4 0  
0 0 1 2 1 3 0 0 0 1 2 1 4 0 0 0 1 2 1 6 0 0 0 1 2 1 9 0 -1 0 1 2 2 4 1 -1 -1 1 3 1 8 2 -1 -1 1 3 2 3 -1 0 0 1 3 2 4 1 -1 -1 1 4 1 5 0 0 0 1 4 1 6 0 0 0 1 4 2 1 1 0 -1  
1 4 2 2 1 0 0 1 5 1 6 0 1 0 1 5 1 7 0 1 0 1 5 2 1 1 0 -1 1 5 2 3 -1 1 0 1 6 1 7 0 0 0 1 7 1 8 0 0 0 1 7 2 3 -1 0 0 1 7 2 4 -1 0 0 1 8 2 0 -1 0 0 1 8 2 3 -3 1 1 1 8 2 4 -1  
0 0 1 9 2 0 0 0 0 1 9 2 2 1 0 0 1 9 2 4 1 0 -1 2 0 2 1 0 0 0 2 0 2 2 1 0 0 0 2 0 2 3 -2 1 1 2 1 2 2 0 0 1 2 1 2 3 -2 1 1

#### Primitive - Information

Space group	<i>I</i> 23
Unit cell lattice	(1.64937, 1.64937, 1.64937)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.2179, 0.28586, 0.42144)
Coordinates, edge 1	(0.2179, 0.28586, 0.42144) ↔ (-0.2179, 0.71414, 0.42144)
Coordinates, edge 2	(0.2179, 0.28586, 0.42144) ↔ (0.71414, 0.57856, 0.2179)
Coordinates, edge 3	(0.2179, 0.28586, 0.42144) ↔ (0.28586, 0.57856, -0.2179)
Coordinates, edge 4	(0.2179, 0.28586, 0.42144) ↔ (0.07856, 0.7179, 0.21414)
Shortest edge length	0.82312
Average edge length	1.00000
Longest edge length	1.16517
Shortest non-bonded distance	0.41865
Smallest angle between edges, degrees	36.29678
Average angle between edges, degrees	84.76293
Largest angle between edges, degrees	156.79532

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 1 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 2 3 -1 0 0 2 3 0 0 0 2 4 0 0 0 2 7 0 0 0 2 8 0 0 0 3 5  
-1 0 0 3 8 1 0 0 3 9 0 0 0 4 6 0 0 0 4 7 0 0 0 4 7 0 1 0 4 1 0 0 0 4 1 0 0 1 0 5 6 0 0 0 5 6 0 0 1 5 9 1 0 0 5 1 1 0 0 -1 5 1 1 0 0 6 1 0 0 1 0 6 1 1 0  
-2 6 1 1 0 0 -1 7 8 0 0 0 7 1 0 0 -1 0 7 1 0 0 0 0 7 1 2 0 0 0 8 9 -1 0 0 8 9 0 -1 -1 8 1 2 -1 1 1 8 1 2 0 0 0 9 1 1 -1 0 0 9 1 2 -1 2 2 9 1 2 0 1 1 1 0 1 1 0 -1  
-2 1 0 1 2 0 1 0 1 1 1 2 0 2 2

**Delauney-Dress-symbol** <1.1:336:124 123 290 289 248 247 238 237 190 189 180 179 80 79 84 83 176 175 278 277 58 57 88 87 316 315  
148 147 52 51 138 137 224 223 184 183 200 199 326 325 118 117 68 67 262 261 284 283 140 139 116 115 92 91 276 275 206 205 166 165  
264 263 90 89 146 145 304 303 96 95 126 125 178 177 318 317 114 113 302 301 142 141 330 329 210 209 272 271 254 253 162 161 308 307  
324 323 292 291 282 281 334 333 152 151 312 311 212 211 306 305 314 313 332 331 194 193 234 233 296 295 266 265 204 203 220 219 242  
241 280 279 188 187 222 221 236 235 202 201 328 327 274 273 310 309 228 227 244 243 246 245 322 321 298 297 268 287 258 257  
270 269 286 285 336 335 320 319,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63 65 67 69 84  
73 75 77 79 81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137 139 154 143  
145 147 149 151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203 205 207 209  
224 213 215 217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269 271 273 275  
277 279 294 283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333 335,2 4 6 8 10  
12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100  
102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164 166  
168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224 226 228 230 232  
234 236 238 240 242 244 246 248 250 252 254 256 258 260 262 264 266 268 270 272 274 276 278 280 282 284 286 288 290 292 294 296 298



**SI.4.12.** [3, 7] on  $23 \times 8$ .

#### Diamond - Information

RCSR-ID	<b>svm</b>
Space group	$Fd\bar{3}$
Unit cell lattice	(4.82665, 4.82665, 4.82665)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.02658, 0.32522, 0.09268)
Coordinates, edge 1	(0.02658, 0.32522, 0.09268) $\leftrightarrow$ (0.09268, 0.22342, -0.07522)
Coordinates, edge 2	(0.02658, 0.32522, 0.09268) $\leftrightarrow$ (0.22342, 0.32522, 0.15732)
Coordinates, edge 3	(0.02658, 0.32522, 0.09268) $\leftrightarrow$ (0.07522, 0.40732, 0.27658)
Coordinates, edge 4	(0.02658, 0.32522, 0.09268) $\leftrightarrow$ (0.17478, 0.40732, -0.02658)
Shortest edge length	0.99999
Average edge length	1.00000
Longest edge length	1.00001
Shortest non-bonded distance	1.37820
Smallest angle between edges, degrees	59.99939
Average angle between edges, degrees	101.42402
Largest angle between edges, degrees	162.94558

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
 12 0 0 0 3 5 0 0 0 3 10 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 6 0 0 0 4 12 0 0 0 4 13 1 0 0 4 15 1 0 0 4 16 0 0 0 5 7 0 0 0 5 9 0 1 0 5 11 0 1 0 5  
 13 0 0 0 5 17 0 0 0 6 8 0 0 0 6 10 1 1 0 6 16 0 0 0 6 18 0 0 0 6 19 0 0 0 7 8 0 0 0 7 11 0 1 0 7 19 0 0 1 7 20 0 0 0 7 21 0 0 0 8 10 1 1 0 8 14 1 1 0  
 8 2 1 0 0 0 8 22 0 0 0 9 10 0 0 0 9 11 0 0 0 9 17 0 -1 0 9 19 -1 -1 0 9 21 -1 -1 1 0 14 0 0 0 10 19 -1 -1 0 11 12 0 0 0 11 20 0 -1 0 11 23 0 0 0 12  
 15 1 0 0 12 17 1 0 1 12 23 0 0 0 12 24 0 0 0 13 15 0 0 0 13 16 -1 0 0 13 17 0 0 0 13 23 -1 0 -1 1 14 15 0 0 0 14 16 0 0 1 14 18 0 0 1 14 22 -1 -1 0  
 15 18 0 0 1 15 24 -1 0 0 16 18 0 0 0 16 22 -1 -1 -1 16 23 0 0 -1 17 21 -1 0 -1 17 23 -1 0 -1 17 24 -1 0 -1 18 19 0 0 0 18 20 0 0 -1 18 24 -1 0 -1  
 19 20 0 0 -1 19 21 0 0 -1 20 22 -1 0 0 20 23 0 1 0 20 24 -1 0 0 21 22 0 0 0 21 24 0 0 0 22 23 1 1 0 22 24 0 0 0

#### Gyroid1 - Information

Space group	<i>I</i> 2 <sub>1</sub> 3
Unit cell lattice	(3.77613, 3.77613, 3.77613)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.17775, 0.38019, 0.19486)
Coordinates, node 2	(0.04941, 0.38544, 0.40721)
Coordinates, edge 1	(0.17775, 0.38019, 0.19486) $\leftrightarrow$ (0.38544, 0.40721, 0.04941)
Coordinates, edge 2	(0.17775, 0.38019, 0.19486) $\leftrightarrow$ (0.04941, 0.61456, 0.09279)
Coordinates, edge 3	(0.17775, 0.38019, 0.19486) $\leftrightarrow$ (0.19486, 0.17775, 0.38019)
Coordinates, edge 4	(0.04941, 0.38544, 0.40721) $\leftrightarrow$ (0.11456, 0.59279, 0.54941)
Coordinates, edge 5	(0.04941, 0.38544, 0.40721) $\leftrightarrow$ (-0.04941, 0.11456, 0.40721)
Coordinates, edge 6	(0.17775, 0.38019, 0.19486) $\leftrightarrow$ (0.11456, 0.40721, -0.04941)
Coordinates, edge 7	(0.17775, 0.38019, 0.19486) $\leftrightarrow$ (0.04941, 0.38544, 0.40721)
Coordinates, edge 8	(0.17775, 0.38019, 0.19486) $\leftrightarrow$ (0.17775, 0.61981, 0.30514)
Shortest edge length	0.93714
Average edge length	1.00000
Longest edge length	1.08883
Shortest non-bonded distance	1.46911
Smallest angle between edges, degrees	53.47727
Average angle between edges, degrees	101.19597
Largest angle between edges, degrees	166.29359

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 0 2 1 1 0 0 0 2  
 12 0 0 0 3 7 0 0 0 3 9 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 8 0 0 0 4 12 0 0 0 4 14 1 0 0 4 15 1 0 0 4 16 0 0 0 5 6 0 0 0 5 8 0 0 0 5 12 0 1 0 5  
 17 0 0 0 5 18 0 0 0 5 19 0 0 0 6 7 0 0 0 6 11 0 1 0 6 12 0 1 0 6 20 0 0 0 6 21 0 0 0 7 15 0 0 0 7 17 0 0 1 7 21 0 0 0 7 22 0 0 0 8 9 1 1 1 8 10 1 1 1  
 8 16 0 0 0 8 19 0 0 0 9 10 0 0 0 9 13 0 0 0 9 19 -1 -1 -1 9 23 0 0 0 10 11 0 0 0 10 16 -1 -1 1 0 10 24 0 0 0 11 12 0 0 0 11 18 -1 -1 0  
 11 19 -1 -1 0 11 20 0 -1 0 12 14 1 0 0 12 17 0 -1 0 13 14 0 0 0 13 16 -1 0 -1 1 3 21 -1 -1 1 3 23 0 0 0 13 24 0 1 0 14 15 0 0 0 14 17 -1 -1 0 14  
 21 -1 -1 1 5 16 -1 0 0 15 22 0 0 0 15 23 0 0 1 16 23 1 0 1 16 24 1 1 1 17 18 0 0 0 17 21 0 0 -1 17 22 0 0 -1 18 19 0 0 0 18 22 0 0 -1 18 24 1 1  
 0 19 20 1 0 0 19 23 1 1 1 20 21 0 0 0 20 22 0 1 0 20 23 0 1 1 20 24 1 2 1 21 24 1 2 1 22 23 0 0 1 22 24 1 1 1

#### Gyroid2 - Information

Space group	<i>I</i> 2 <sub>1</sub> 3
Unit cell lattice	(3.77614, 3.77614, 3.77614)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.09277, 0.4506, 0.11457)
Coordinates, node 2	(0.11981, 0.30513, 0.32225)
Coordinates, edge 1	(0.11981, 0.30513, 0.32225) ↔ (-0.11457, 0.40723, 0.4506)
Coordinates, edge 2	(0.11981, 0.30513, 0.32225) ↔ (0.09277, 0.4506, 0.11457)
Coordinates, edge 3	(0.09277, 0.4506, 0.11457) ↔ (-0.0494, 0.38543, -0.09277)
Coordinates, edge 4	(0.11981, 0.30513, 0.32225) ↔ (0.30513, 0.32225, 0.11981)
Coordinates, edge 5	(0.11981, 0.30513, 0.32225) ↔ (-0.11981, 0.19487, 0.32225)
Coordinates, edge 6	(0.11981, 0.30513, 0.32225) ↔ (0.11457, 0.09277, 0.4506)
Coordinates, edge 7	(0.11981, 0.30513, 0.32225) ↔ (0.09277, 0.5494, 0.38543)
Coordinates, edge 8	(0.09277, 0.4506, 0.11457) ↔ (0.09277, 0.5494, 0.38543)
Shortest edge length	0.93717
Average edge length	1.00000
Longest edge length	1.08874
Shortest non-bonded distance	1.46925
Smallest angle between edges, degrees	53.47832
Average angle between edges, degrees	101.19593
Largest angle between edges, degrees	166.28693

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1 0 0 0 2  
12 0 0 0 3 7 0 0 0 3 9 0 0 0 3 13 0 0 0 3 14 0 0 0 3 15 0 0 0 4 8 0 0 0 4 12 0 0 0 4 14 1 0 0 4 15 1 0 0 4 16 0 0 0 5 6 0 0 0 5 8 0 0 0 5 12 0 1 0 5  
17 0 0 0 5 18 0 0 0 5 19 0 0 0 6 7 0 0 0 6 11 0 1 0 6 12 0 1 0 6 20 0 0 0 6 21 0 0 0 7 15 0 0 0 7 17 2 0 0 7 22 0 0 0 8 9 1 1 1 8 10 1 1 1  
8 16 0 0 0 8 19 0 0 0 9 10 0 0 0 9 13 0 0 0 9 19 -1 -1 -1 9 23 0 0 0 10 11 0 0 0 10 16 -1 -1 -1 10 18 -1 -1 0 10 24 0 0 0 11 12 0 0 0 11 18 -1 -1 0  
11 19 -1 -1 0 11 20 0 -1 0 12 14 1 0 0 12 17 0 -1 0 13 14 0 0 0 13 16 -1 0 -1 13 21 -1 -1 13 23 0 0 0 13 24 0 1 0 14 15 0 0 0 14 17 -1 -1 0 14  
21 -1 -1 15 16 -1 0 0 15 22 0 0 0 15 23 0 0 1 16 23 1 0 1 16 24 1 1 1 17 18 0 0 0 17 21 0 0 -1 17 22 0 0 -1 18 19 0 0 0 18 22 0 0 -1 18 24 1 1  
0 19 20 1 0 0 19 23 1 1 1 20 21 0 0 0 20 22 0 1 0 20 23 0 1 1 20 24 1 2 1 21 24 1 2 1 22 23 0 0 1 22 24 1 1 1

#### Primitive - Information

Space group	<i>I</i> 23
Unit cell lattice	(2.82942, 2.82942, 2.82942)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.12492, 0.37476, 0.37494)
Coordinates, edge 1	(0.12492, 0.37476, 0.37494) ↔ (0.12506, 0.62492, 0.12524)
Coordinates, edge 2	(0.12492, 0.37476, 0.37494) ↔ (0.37476, 0.37494, 0.12492)
Coordinates, edge 3	(0.12492, 0.37476, 0.37494) ↔ (0.12524, 0.12506, 0.62492)
Coordinates, edge 4	(0.12492, 0.37476, 0.37494) ↔ (-0.12492, 0.37476, 0.62506)
Shortest edge length	0.99971
Average edge length	1.00000
Longest edge length	1.00026
Shortest non-bonded distance	1.00101
Smallest angle between edges, degrees	59.96954
Average angle between edges, degrees	98.58356
Largest angle between edges, degrees	179.96835

**Primitive - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 7 1 0 0 2 8 1 0 0 2 9 0 0 0 2 1 0  
0 0 0 3 5 0 0 0 3 8 1 0 0 3 10 0 1 0 3 11 0 0 0 3 12 0 0 0 4 6 0 0 1 4 8 0 0 0 4 9 -1 1 1 4 1 0 0 0 4 11 -1 0 1 5 6 0 0 0 5 7 0 1 0 5 9 -1 1 0 5 1 1 0  
0 0 5 12 0 0 -1 6 7 0 0 0 6 9 -1 1 0 6 10 0 0 -1 6 12 0 -1 -1 7 8 0 0 0 7 9 -1 0 0 7 12 0 -1 -1 8 11 -1 0 1 8 12 -1 0 0 9 10 0 0 0 9 11 0 -1 0 1 0 1 1 0  
-1 0 1 0 12 0 -1 0 1 1 12 0 0 -1

**Delauney-Dress-symbol** <1:1:336:222 221 238 237 318 317 306 305 170 169 60 59 22 21 150 149 94 93 224 223 58 57 200 199 132 131  
230 229 164 163 178 177 140 139 102 101 88 87 248 247 256 255 310 309 192 191 328 327 156 155 216 215 110 109 182 181 160 159 324  
323 74 73 202 201 204 203 336 335 296 295 314 313 266 265 270 269 250 249 100 99 212 211 148 147 276 275 138 137 282 281 258 257  
214 213 288 287 208 207 280 279 144 143 300 299 332 331 188 187 176 175 152 151 198 197 284 283 302 301 278 277 174 173 326 325 180  
179 228 227 218 217 304 303 244 243 290 289 330 329 322 321 234 233 268 267 286 285 226 225 246 245 320 319 262 261 292 274 273  
312 311 294 293 272 271 334 333 316 315,14 3 5 7 9 11 13 28 17 19 21 23 25 27 42 31 33 35 37 39 41 56 45 47 49 51 53 55 70 59 61 63 65  
67 69 84 73 75 77 79 81 83 98 87 89 91 93 95 97 112 101 103 105 107 109 111 126 115 117 119 121 123 125 140 129 131 133 135 137 139  
154 143 145 147 149 151 153 168 157 159 161 163 165 167 182 171 173 175 177 179 181 196 185 187 189 191 193 195 210 199 201 203 205  
207 209 224 213 215 217 219 221 223 238 227 229 231 233 235 237 252 241 243 245 247 249 251 266 255 257 259 261 263 265 280 269 271  
273 275 277 279 294 283 285 287 289 291 293 308 297 299 301 303 305 307 322 311 313 315 317 319 321 336 325 327 329 331 333 335,2 4  
6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98  
100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164  
166 168 170 172 174 176 178 180 182 184 186 188 190 192 194 196 198 200 202 204 206 208 210 212 214 216 218 220 222 224 226 228 230  
232 234 236 238 240 242 244 246 248 250 252 254 256 258 260 262 264 266 268 270 272 274 276 278 280 282 284 286 288 290 292 294 296



**SI.4.13.** [3, 8] on 2\*23.

#### Diamond - Information

RCSR-ID	<b>pyc</b>
Space group	<i>Fd<math>\bar{3}m</math></i>
Unit cell lattice	(3.77131, 3.77131, 3.77131)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.125, 0.31249)
Coordinates, edge 1	(0.125, 0.125, 0.31249) $\leftrightarrow$ (0.18751, -0.125, 0.375)
Coordinates, edge 2	(0.125, 0.125, 0.31249) $\leftrightarrow$ (0.125, -0.06249, 0.125)
Shortest edge length	0.99996
Average edge length	1.00000
Longest edge length	1.00004
Shortest non-bonded distance	1.41416
Smallest angle between edges, degrees	59.99484
Average angle between edges, degrees	96.24675
Largest angle between edges, degrees	152.72962

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 3 0 0 0 2 4 0 0 0 2 7 0 1 0 2 8 1 0 0 2 1 0  
0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 5 0 0 0 3 6 0 1 1 3 9 1 0 0 3 1 0 0 0 3 1 1 0 0 1 3 1 2 0 0 0 4 5 0 0 0 4 6 0 0 0 4 9 1 -1 -1 4 1 0 0 0 4 1 1 0 -1 0 4 1 2  
0 -1 -1 5 7 0 0 0 5 8 1 -1 0 5 1 0 0 0 5 1 1 0 -1 0 5 1 2 0 -1 0 6 7 0 0 0 6 8 0 0 0 6 1 0 -1 0 0 6 1 1 0 -1 0 6 1 2 0 -1 -1 7 9 0 0 0 7 1 0 -1 0 0 7 1 1 0 -1  
0 7 1 2 0 -1 0 8 9 0 0 0 8 1 0 -1 0 0 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 0 9 1 1 -1 0 1 9 1 2 -1 0 0

#### Gyroid1 - Information

RCSR-ID	<b>teo</b>
Space group	<i>I4<sub>1</sub>32</i>
Unit cell lattice	(2.8142, 2.8142, 2.8142)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.29691)
Coordinates, edge 1	(0.0, 0.25, 0.29691) $\leftrightarrow$ (0.04691, 0.5, 0.25)
Coordinates, edge 2	(0.0, 0.25, 0.29691) $\leftrightarrow$ (0.25, 0.29691, 0.0)
Coordinates, edge 3	(0.0, 0.25, 0.29691) $\leftrightarrow$ (0.25, 0.04691, 0.5)
Shortest edge length	0.72790
Average edge length	1.00000
Longest edge length	1.10025
Shortest non-bonded distance	0.96755
Smallest angle between edges, degrees	39.13529
Average angle between edges, degrees	99.18995
Largest angle between edges, degrees	166.21880

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 0 0 0 2 6 1 0 0 2 7 1 0 0 2 1 0  
0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 4 0 0 1 3 5 0 0 1 3 6 0 0 0 3 7 0 0 0 3 1 0 0 1 0 3 1 1 -1 -1 1 3 1 2 -1 0 1 4 8 0 0 0 4 9 1 1 0 4 1 0 0 1 -1 4 1 1 0 0 0 4 1 2  
-1 0 0 5 8 1 0 0 5 9 0 0 0 5 1 0 0 1 -1 5 1 1 -1 -1 0 5 1 2 0 0 0 6 8 0 0 0 6 9 0 0 1 6 1 0 -1 0 0 6 1 1 -1 0 0 6 1 2 -1 0 1 7 8 0 -1 1 7 9 0 0 0 7 1 0 -1 0 0  
7 1 1 -1 1 7 1 2 -1 0 0 8 1 0 -1 1 -1 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 -1 9 1 1 -1 1 0 9 1 2 -1 0 0

#### Gyroid2 - Information

RCSR-ID	<b>teo</b>
Space group	<i>I4<sub>1</sub>32</i>
Unit cell lattice	(2.8142, 2.8142, 2.8142)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.45309)
Coordinates, edge 1	(0.0, 0.25, 0.45309) $\leftrightarrow$ (0.20309, 0.5, 0.25)
Coordinates, edge 2	(0.0, 0.25, 0.45309) $\leftrightarrow$ (0.04691, 0.0, 0.75)
Coordinates, edge 3	(0.0, 0.25, 0.45309) $\leftrightarrow$ (0.25, 0.20309, 0.5)
Shortest edge length	0.72790
Average edge length	1.00000
Longest edge length	1.10025
Shortest non-bonded distance	0.96755
Smallest angle between edges, degrees	39.13529
Average angle between edges, degrees	99.18995
Largest angle between edges, degrees	166.21880

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 0 0 0 2 6 1 0 0 2 7 1 0 0 2 1 0  
0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 4 0 0 1 3 5 0 0 1 3 6 0 0 0 3 7 0 0 0 3 1 0 0 1 0 3 1 1 -1 -1 1 3 1 2 -1 0 1 4 8 0 0 0 4 9 1 1 0 4 1 0 0 1 -1 4 1 1 0 0 0 4 1 2  
-1 0 0 5 8 1 0 0 5 9 0 0 0 5 1 0 0 1 -1 5 1 1 -1 -1 0 5 1 2 0 0 0 6 8 0 0 0 6 9 0 0 1 6 1 0 -1 0 0 6 1 1 -1 0 0 6 1 2 -1 0 1 7 8 0 -1 1 7 9 0 0 0 7 1 0 -1 0 0  
7 1 1 -1 1 7 1 2 -1 0 0 8 1 0 -1 1 -1 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 -1 9 1 1 -1 1 0 9 1 2 -1 0 0

## **Primitive - Information**

Space group	<i>I432</i>
Unit cell lattice	(2.07055, 2.07055, 2.07055)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.5)
Coordinates, edge 1	(0.0, 0.25, 0.5) ↔ (0.0, 0.5, 0.25)
Coordinates, edge 2	(0.0, 0.25, 0.5) ↔ (0.5, 0.0, 0.75)
Shortest edge length	0.73205
Average edge length	1.00000
Longest edge length	1.26795
Shortest non-bonded distance	1.03528
Smallest angle between edges, degrees	30.00000
Average angle between edges, degrees	98.02422
Largest angle between edges, degrees	146.44269

**Primitive - Systre-key** 3120001210013000131001400014010150001501023-10023000240002400126  
00-12600035-110350013601-136100450-10450004600-24600-15601-25610-1

**SI.4.14.** [3, 8] on \*2224.

#### Diamond - Information

RCSR-ID	<b>tej</b>
Space group	<i>P42/nm</i>
Unit cell lattice	(1.58181, 1.58181, 2.13251)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25, 0.25, 0.0)
Coordinates, node 2	(0.75, 0.25, 0.25)
Coordinates, edge 1	(0.25, 0.25, 0.0) ↔ (0.25, 0.25, 0.5)
Coordinates, edge 2	(0.25, 0.25, 0.0) ↔ (0.25, -0.25, -0.25)
Coordinates, edge 3	(0.25, 0.25, 0.0) ↔ (0.75, -0.25, 0.0)
Shortest edge length	0.95381
Average edge length	1.00000
Longest edge length	1.11851
Shortest non-bonded distance	1.11851
Smallest angle between edges, degrees	54.10258
Average angle between edges, degrees	101.35450
Largest angle between edges, degrees	180.00000

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 5 1 0 0 2 3 0 -1 0 2 3 1 0 0 2 4 0 0 0 2 4 0 0 1 2 6  
0 0 0 2 6 1 0 0 3 5 0 0 0 3 5 0 0 1 3 6 0 0 0 3 6 0 1 0 4 5 0 0 0 4 5 1 -1 0 4 6 0 0 -1 4 6 1 0 -1 5 6 0 0 -1 5 6 0 1 -1

#### Gyroid1 - Information

RCSR-ID	<b>tie</b>
Space group	<i>I4<sub>1</sub>/acd</i>
Unit cell lattice	(2.47046, 2.47046, 3.2558)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.375)
Coordinates, node 2	(0.13147, 0.11853, 0.125)
Coordinates, edge 1	(0.13147, 0.11853, 0.125) ↔ (0.36853, 0.11853, -0.125)
Coordinates, edge 2	(0.0, 0.25, 0.375) ↔ (0.13147, -0.11853, 0.375)
Coordinates, edge 3	(0.0, 0.25, 0.375) ↔ (0.13147, 0.11853, 0.125)
Coordinates, edge 4	(0.13147, 0.11853, 0.125) ↔ (0.36853, 0.38147, 0.375)
Shortest edge length	0.93461
Average edge length	1.00000
Longest edge length	1.19476
Shortest non-bonded distance	0.91865
Smallest angle between edges, degrees	49.88215
Average angle between edges, degrees	100.31236
Largest angle between edges, degrees	180.00000

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 0 0 2 8 0 1 0 2 9 0 0 0 2 1 0  
0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 4 -1 0 0 3 6 -1 0 0 3 7 0 0 0 3 1 0 0 0 1 3 1 2 0 0 0 4 5 1 1 1 4 8 0 0 0 4 9 0 0 1 4 1 0 1 0 1 4 1 1 0 0 0 4 1 2 1 0 1 5 6 0  
0 0 5 7 0 0 -1 5 1 0 0 -1 0 5 1 0 0 0 5 1 1 -1 -1 -1 6 8 0 0 -1 6 9 0 -1 0 6 1 0 0 -1 0 6 1 1 0 -1 -1 6 1 2 1 0 0 7 8 0 0 0 7 9 -1 -1 0 7 1 0 0 0 1 7 1 1 -1  
-1 0 7 1 2 0 -1 0 8 1 1 0 -1 0 8 1 2 0 -1 0 8 1 2 1 0 1 9 1 0 0 0 9 1 1 0 0 -1 9 1 1 0 0 0 9 1 2 1 0 0

#### Gyroid2 - Information

RCSR-ID	<b>tie</b>
Space group	<i>I4<sub>1</sub>/acd</i>
Unit cell lattice	(2.47052, 2.47052, 3.25568)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.375)
Coordinates, node 2	(0.13146, 0.38146, 0.125)
Coordinates, edge 1	(0.13146, 0.38146, 0.125) ↔ (0.36854, 0.38146, -0.125)
Coordinates, edge 2	(0.0, 0.25, 0.375) ↔ (0.13146, 0.38146, 0.125)
Coordinates, edge 3	(0.0, 0.25, 0.375) ↔ (0.36854, 0.11854, 0.375)
Coordinates, edge 4	(0.13146, 0.38146, 0.125) ↔ (0.36854, 0.11854, 0.375)
Shortest edge length	0.93458
Average edge length	1.00000
Longest edge length	1.19476
Shortest non-bonded distance	0.91864
Smallest angle between edges, degrees	49.88011
Average angle between edges, degrees	100.31223
Largest angle between edges, degrees	180.00000

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 2 3 0 0 2 5 0 0 2 8 0 1 0 2 9 0 0 0 2 1 0  
0 0 0 2 1 1 0 0 0 2 1 2 0 0 3 4 -1 0 0 3 6 -1 0 0 3 7 0 0 0 3 1 0 0 0 1 3 1 2 0 0 4 5 1 1 4 8 0 0 4 9 0 0 1 4 1 0 1 0 1 4 1 1 0 0 4 1 2 1 0 1 5 6 0  
0 0 5 7 0 0 -1 5 1 0 0 -1 0 5 1 0 0 0 5 1 1 -1 -1 -1 6 8 0 0 -1 6 9 0 -1 0 6 1 0 0 -1 0 6 1 1 0 -1 -1 6 1 2 1 0 0 7 8 0 0 7 9 -1 -1 0 7 1 0 0 0 1 7 1 1 -1  
-1 0 7 1 2 0 -1 0 8 1 1 0 -1 0 8 1 2 0 -1 0 8 1 2 1 0 1 9 1 0 0 0 9 1 1 0 0 -1 9 1 1 0 0 9 1 2 1 0 0

## **Primitive - Information**

RCSR-ID	dgp
Space group	$I4/mmm$
Unit cell lattice	(2.44943, 2.44943, 1.8964)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.20413, 0.20413, 0.0)
Coordinates, node 2	(0.5, 0.0, 0.25)
Coordinates, edge 1	(0.20413, 0.20413, 0.0) $\leftrightarrow$ (0.29587, 0.29587, 0.5)
Coordinates, edge 2	(0.20413, 0.20413, 0.0) $\leftrightarrow$ (0.20413, -0.20413, 0.0)
Coordinates, edge 3	(0.20413, 0.20413, 0.0) $\leftrightarrow$ (0.5, 0.0, 0.25)
Shortest edge length	0.99999
Average edge length	1.00000
Longest edge length	1.00004
Shortest non-bonded distance	0.94820
Smallest angle between edges, degrees	56.60233
Average angle between edges, degrees	100.22217
Largest angle between edges, degrees	161.71466

**Primitive - Systre-key** 3120001211013001310014000140101500016000230-1023000250002500126  
 -1-10260-1134-1003401035001360014500045101460-10460-1156-1-10560-10

**SI.4.15.** [3, 8] on \*2323.

#### Diamond - Information

RCSR-ID	<b>pyc</b>
Space group	$Fd\bar{3}m$
Unit cell lattice	(3.77131, 3.77131, 3.77131)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.125, 0.31249)
Coordinates, edge 1	(0.125, 0.125, 0.31249) $\leftrightarrow$ (0.18751, -0.125, 0.375)
Coordinates, edge 2	(0.125, 0.125, 0.31249) $\leftrightarrow$ (0.125, -0.06249, 0.125)
Shortest edge length	0.99996
Average edge length	1.00000
Longest edge length	1.00004
Shortest non-bonded distance	1.41416
Smallest angle between edges, degrees	59.99475
Average angle between edges, degrees	96.24676
Largest angle between edges, degrees	152.72955

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 3 0 0 0 2 4 0 0 0 2 7 0 1 0 2 8 1 0 0 2 1 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 5 0 0 0 3 6 0 1 1 3 9 1 0 0 3 1 0 0 0 3 1 1 0 0 1 3 1 2 0 0 0 4 5 0 0 0 4 6 0 0 0 4 9 1 -1 -1 4 1 0 0 0 0 4 1 1 0 -1 0 4 1 2 0 -1 -1 5 7 0 0 0 5 8 1 -1 0 5 1 0 0 0 5 1 1 0 -1 0 5 1 2 0 -1 0 6 7 0 0 0 6 8 0 0 0 6 1 0 -1 0 0 6 1 1 0 -1 0 6 1 2 0 -1 -1 7 9 0 0 0 7 1 0 -1 0 0 7 1 1 0 -1 0 7 1 2 0 -1 0 8 9 0 0 0 8 1 0 -1 0 0 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 0 9 1 1 -1 0 1 9 1 2 -1 0 0

#### Gyroid1 - Information

RCSR-ID	<b>teo</b>
Space group	$I4_132$
Unit cell lattice	(2.8142, 2.8142, 2.8142)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.45309)
Coordinates, edge 1	(0.0, 0.25, 0.45309) $\leftrightarrow$ (0.20309, 0.5, 0.25)
Coordinates, edge 2	(0.0, 0.25, 0.45309) $\leftrightarrow$ (0.25, 0.20309, 0.5)
Coordinates, edge 3	(0.0, 0.25, 0.45309) $\leftrightarrow$ (0.04691, 0.0, 0.75)
Shortest edge length	0.72790
Average edge length	1.00000
Longest edge length	1.10025
Shortest non-bonded distance	0.96755
Smallest angle between edges, degrees	39.13529
Average angle between edges, degrees	99.18995
Largest angle between edges, degrees	166.21880

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 0 0 0 2 6 1 0 0 2 7 1 0 0 2 1 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 4 0 0 1 3 5 0 0 1 3 6 0 0 0 3 7 0 0 0 3 1 0 0 1 0 3 1 1 -1 -1 1 3 1 2 -1 0 1 4 8 0 0 0 4 9 1 1 0 4 1 0 0 1 -1 4 1 1 0 0 0 4 1 2 -1 0 0 5 8 1 0 0 5 9 0 0 0 5 1 0 0 1 -1 5 1 1 -1 -1 0 5 1 2 0 0 0 6 8 0 0 0 6 9 0 0 1 6 1 0 -1 0 0 6 1 1 -1 0 0 6 1 2 -1 0 1 7 8 0 -1 1 7 9 0 0 0 7 1 0 -1 0 0 7 1 1 1 -1 1 7 1 2 -1 0 0 8 1 0 -1 1 -1 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 -1 9 1 1 -1 0 1 9 1 2 -1 0 0

#### Gyroid2 - Information

RCSR-ID	<b>teo</b>
Space group	$I4_132$
Unit cell lattice	(2.8142, 2.8142, 2.8142)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.29691)
Coordinates, edge 1	(0.0, 0.25, 0.29691) $\leftrightarrow$ (0.04691, 0.5, 0.25)
Coordinates, edge 2	(0.0, 0.25, 0.29691) $\leftrightarrow$ (0.25, 0.04691, 0.5)
Coordinates, edge 3	(0.0, 0.25, 0.29691) $\leftrightarrow$ (0.25, 0.29691, 0.0)
Shortest edge length	0.72790
Average edge length	1.00000
Longest edge length	1.10025
Shortest non-bonded distance	0.96755
Smallest angle between edges, degrees	39.13529
Average angle between edges, degrees	99.18995
Largest angle between edges, degrees	166.21880

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 0 0 0 2 6 1 0 0 2 7 1 0 0 2 1 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 4 0 0 1 3 5 0 0 1 3 6 0 0 0 3 7 0 0 0 3 1 0 0 1 0 3 1 1 -1 -1 1 3 1 2 -1 0 1 4 8 0 0 0 4 9 1 1 0 4 1 0 0 1 -1 4 1 1 0 0 0 4 1 2 -1 0 0 5 8 1 0 0 5 9 0 0 0 5 1 0 0 1 -1 5 1 1 -1 -1 0 5 1 2 0 0 0 6 8 0 0 0 6 9 0 0 1 6 1 0 -1 0 0 6 1 1 -1 0 0 6 1 2 -1 0 1 7 8 0 -1 1 7 9 0 0 0 7 1 0 -1 0 0 7 1 1 1 -1 1 7 1 2 -1 0 0 8 1 0 -1 1 -1 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 -1 9 1 1 -1 0 1 9 1 2 -1 0 0

## **Primitive - Information**

Space group	<i>I432</i>
Unit cell lattice	(2.07055, 2.07055, 2.07055)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.5)
Coordinates, edge 1	(0.0, 0.25, 0.5) ↔ (0.0, 0.5, 0.25)
Coordinates, edge 2	(0.0, 0.25, 0.5) ↔ (0.25, 0.5, 0.0)
Shortest edge length	0.73205
Average edge length	1.00000
Longest edge length	1.26795
Shortest non-bonded distance	1.03528
Smallest angle between edges, degrees	30.00000
Average angle between edges, degrees	98.02422
Largest angle between edges, degrees	146.44269

**Primitive - Systre-key** 3120001210013000131001400014010150001501023-10023000240002400126  
00-12600035-110350013601-136100450-10450004600-24600-15601-25610-1

**SI.4.16.** [3, 8] on 2223<sub>01</sub>.

#### Diamond - Information

RCSR-ID	<b>dqg</b>
Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(3.46334, 3.46334, 3.46334)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.50575, 0.24425)
Coordinates, edge 1	(0.125, 0.50575, 0.24425) ↔ (0.24425, 0.375, -0.00575)
Coordinates, edge 2	(0.125, 0.50575, 0.24425) ↔ (0.24425, 0.625, 0.00575)
Coordinates, edge 3	(0.125, 0.50575, 0.24425) ↔ (0.375, 0.50575, 0.25575)
Shortest edge length	0.86675
Average edge length	1.00000
Longest edge length	1.06080
Shortest non-bonded distance	1.10921
Smallest angle between edges, degrees	49.37521
Average angle between edges, degrees	97.10877
Largest angle between edges, degrees	176.27572

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 3 0 0 0 2 4 0 0 0 2 5 1 0 0 2 7 1 0 0 2 8  
0 1 0 2 1 0 0 0 0 2 1 1 0 0 0 3 4 -1 1 0 3 5 0 0 0 3 8 0 1 0 3 9 0 1 0 3 1 1 -1 1 0 3 1 2 0 0 0 4 6 0 0 0 4 9 0 0 1 4 1 0 0 0 4 1 1 0 0 0 4 1 2 1 -1 0 5 6 0  
0 0 5 7 0 0 0 5 1 0 -1 0 0 5 1 1 -1 0 1 5 1 2 0 0 0 6 8 0 0 0 6 9 0 0 1 6 1 0 -1 0 0 6 1 1 -1 0 1 6 1 2 0 -1 0 7 8 0 1 -1 7 9 0 0 0 7 1 0 0 0 -1 7 1 1 -1 0 0 7  
1 2 0 0 -1 8 9 0 0 0 8 1 0 0 -1 0 8 1 2 0 -1 0 9 1 0 0 0 -1 9 1 1 -1 0 0 1 0 1 2 1 -1 0 1 1 1 2 1 0 -1

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.67874, 2.67874, 2.67874)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.08261, 0.375, 0.33261)
Coordinates, edge 1	(0.08261, 0.375, 0.33261) ↔ (0.33261, 0.08261, 0.375)
Coordinates, edge 2	(0.08261, 0.375, 0.33261) ↔ (0.125, 0.33261, -0.08261)
Coordinates, edge 3	(0.08261, 0.375, 0.33261) ↔ (0.08261, 0.625, 0.16739)
Shortest edge length	0.80272
Average edge length	1.00000
Longest edge length	1.12380
Shortest non-bonded distance	1.13071
Smallest angle between edges, degrees	43.38730
Average angle between edges, degrees	99.29325
Largest angle between edges, degrees	171.11604

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 3 0 0 0 2 4 1 0 0 2 5 0 0 0 2 7 1 0 0 2 8 0  
1 0 2 1 0 0 0 0 2 1 1 0 0 0 3 4 0 0 0 3 5 0 0 0 1 3 6 0 1 0 3 8 0 1 0 3 1 1 0 0 1 3 1 2 0 0 0 4 7 0 0 0 4 9 0 1 0 4 1 0 -1 0 0 4 1 1 -1 1 0 4 1 2 0 0 0 5 6 -1 1  
-1 5 9 0 0 0 5 1 0 -1 0 0 5 1 1 0 0 0 5 1 2 0 0 -1 6 7 0 0 0 6 8 0 0 0 6 9 1 -1 1 6 1 0 0 -1 1 6 1 1 0 -1 1 7 8 0 0 1 7 1 0 0 -1 1 7 1 1 -1 0 0 7 1 2 0 -1 0 8 9  
0 0 0 8 1 0 0 -1 0 8 1 2 0 -1 -1 9 1 0 -1 -1 0 9 1 1 -1 0 0 9 1 2 0 -1 -1 1 0 1 2 1 0 -1 1 1 1 2 1 -1

#### Gyroid2 - Information

RCSR-ID	<b>tes</b>
Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.82846, 2.82846, 2.82846)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.12501, 0.375, 0.37501)
Coordinates, edge 1	(0.12501, 0.375, 0.37501) ↔ (0.375, 0.37501, 0.12501)
Coordinates, edge 2	(0.12501, 0.375, 0.37501) ↔ (0.12499, 0.12501, 0.625)
Coordinates, edge 3	(0.12501, 0.375, 0.37501) ↔ (0.12501, 0.625, 0.12499)
Shortest edge length	0.99997
Average edge length	1.00000
Longest edge length	1.00005
Shortest non-bonded distance	0.99993
Smallest angle between edges, degrees	59.99662
Average angle between edges, degrees	100.71432
Largest angle between edges, degrees	179.99766

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 1 0 0 2 6 0 1 0 2 7 0 0 0 2 8 0  
1 0 2 1 0 0 0 0 2 1 1 0 0 0 3 5 0 0 0 3 6 0 0 0 3 7 0 1 1 3 8 0 1 1 3 1 0 0 0 1 3 1 1 0 0 0 3 1 2 0 0 0 4 5 0 0 0 4 6 0 1 0 4 7 0 1 1 4 9 0 1 1 4 1 0 -1 0 0  
4 1 2 0 0 0 5 8 0 1 1 5 1 0 -1 0 0 5 1 1 -1 0 0 5 1 2 -1 0 0 6 8 0 0 0 6 9 1 0 1 6 1 1 0 0 0 6 1 2 0 -1 0 7 9 0 0 0 7 1 0 0 -1 0 7 1 1 0 0 0 7 1 2 0 -1 1 8 9 0  
0 0 8 1 0 0 -1 0 8 1 2 -1 -1 9 1 0 -1 -1 0 9 1 1 -1 0 0 9 1 2 -1 -1 1 0 1 1 0 1 0 1 1 1 2 0 0 0

## **Primitive - Information**

RCSR-ID	dgo
Space group	P432
Unit cell lattice	(2.17792, 2.17792, 2.17792)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.19064, 0.19064, 0.5)
Coordinates, edge 1	(0.19064, 0.19064, 0.5) ↔ (0.19064, 0.5, 0.19064)
Coordinates, edge 2	(0.19064, 0.19064, 0.5) ↔ (0.5, -0.19064, 0.80936)
Coordinates, edge 3	(0.19064, 0.19064, 0.5) ↔ (0.19064, -0.19064, 0.5)
Shortest edge length	0.83040
Average edge length	1.00000
Longest edge length	1.26391
Shortest non-bonded distance	1.17436
Smallest angle between edges, degrees	41.07179
Average angle between edges, degrees	99.60816
Largest angle between edges, degrees	169.94561

**Primitive - Systre-key** 312000130001400015000160001700018000190002300024000251002710028  
 010210002110034-1-113600039001310-1-113110003120004611-147100480004100-1041211-15  
 6000570005801059010510-100512-10067-1-11610-1-216110-10612-1007900071110-171201-18900  
 08100-108110-10812-1-10910-1-1091110-191200-1101111-11112-100

**SI.4.17.** [3, 8] on 2223<sub>11</sub>.

#### Diamond - Information

RCSR-ID	<b>pyc</b>
Space group	<i>Fd</i> $\bar{3}m$
Unit cell lattice	(3.77131, 3.77131, 3.77131)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.125, 0.31249)
Coordinates, edge 1	(0.125, 0.125, 0.31249) $\leftrightarrow$ (0.18751, -0.125, 0.375)
Coordinates, edge 2	(0.125, 0.125, 0.31249) $\leftrightarrow$ (0.125, -0.06249, 0.125)
Shortest edge length	0.99996
Average edge length	1.00000
Longest edge length	1.00004
Shortest non-bonded distance	1.41416
Smallest angle between edges, degrees	59.99475
Average angle between edges, degrees	96.24676
Largest angle between edges, degrees	152.72955

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 3 0 0 0 2 4 0 0 0 2 7 0 1 0 2 8 1 0 0 2 10 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 5 0 0 0 3 6 0 1 1 3 9 1 0 0 3 1 0 0 0 3 1 1 0 0 1 3 1 2 0 0 0 4 5 0 0 0 4 6 0 0 0 4 9 1 -1 -1 4 1 0 0 0 0 4 1 1 0 -1 0 4 1 2 0 -1 -1 5 7 0 0 0 5 8 1 -1 0 5 1 0 0 0 5 1 1 0 -1 0 5 1 2 0 -1 0 6 7 0 0 0 6 8 0 0 0 6 1 0 -1 0 0 6 1 1 0 -1 0 6 1 2 0 -1 -1 7 9 0 0 0 7 1 0 -1 0 0 7 1 1 0 -1 0 7 1 2 0 -1 0 8 9 0 0 0 8 1 0 -1 0 0 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 0 9 1 1 -1 0 1 9 1 2 -1 0 0

#### Gyroid1 - Information

RCSR-ID	<b>teo</b>
Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.8142, 2.8142, 2.8142)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.45309)
Coordinates, edge 1	(0.0, 0.25, 0.45309) $\leftrightarrow$ (0.20309, 0.5, 0.25)
Coordinates, edge 2	(0.0, 0.25, 0.45309) $\leftrightarrow$ (0.25, 0.20309, 0.5)
Coordinates, edge 3	(0.0, 0.25, 0.45309) $\leftrightarrow$ (0.04691, 0.0, 0.75)
Shortest edge length	0.72790
Average edge length	1.00000
Longest edge length	1.10025
Shortest non-bonded distance	0.96755
Smallest angle between edges, degrees	39.13529
Average angle between edges, degrees	99.18995
Largest angle between edges, degrees	166.21880

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 0 0 0 2 6 1 0 0 2 7 1 0 0 2 10 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 4 0 0 1 3 5 0 0 1 3 6 0 0 0 3 7 0 0 0 3 1 0 0 1 0 3 1 1 -1 -1 1 3 1 2 -1 0 1 4 8 0 0 0 4 9 1 1 0 4 1 0 0 1 -1 4 1 1 0 0 0 4 1 2 -1 0 0 5 8 1 0 0 5 9 0 0 0 5 1 0 0 1 -1 5 1 1 -1 -1 0 5 1 2 0 0 0 6 8 0 0 0 6 9 0 0 1 6 1 0 -1 0 0 6 1 1 -1 0 0 6 1 2 -1 0 1 7 8 0 -1 1 7 9 0 0 0 7 1 0 -1 0 0 7 1 1 1 -1 1 7 1 2 -1 0 0 8 1 0 -1 1 -1 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 -1 9 1 1 -1 0 1 9 1 2 -1 0 0

#### Gyroid2 - Information

RCSR-ID	<b>teo</b>
Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.8142, 2.8142, 2.8142)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.29691)
Coordinates, edge 1	(0.0, 0.25, 0.29691) $\leftrightarrow$ (0.04691, 0.5, 0.25)
Coordinates, edge 2	(0.0, 0.25, 0.29691) $\leftrightarrow$ (0.25, 0.04691, 0.5)
Coordinates, edge 3	(0.0, 0.25, 0.29691) $\leftrightarrow$ (0.25, 0.29691, 0.0)
Shortest edge length	0.72790
Average edge length	1.00000
Longest edge length	1.10025
Shortest non-bonded distance	0.96755
Smallest angle between edges, degrees	39.13529
Average angle between edges, degrees	99.18995
Largest angle between edges, degrees	166.21880

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 0 0 0 2 6 1 0 0 2 7 1 0 0 2 10 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 4 0 0 1 3 5 0 0 1 3 6 0 0 0 3 7 0 0 0 3 1 0 0 1 0 3 1 1 -1 -1 1 3 1 2 -1 0 1 4 8 0 0 0 4 9 1 1 0 4 1 0 0 1 -1 4 1 1 0 0 0 4 1 2 -1 0 0 5 8 1 0 0 5 9 0 0 0 5 1 0 0 1 -1 5 1 1 -1 -1 0 5 1 2 0 0 0 6 8 0 0 0 6 9 0 0 1 6 1 0 -1 0 0 6 1 1 -1 0 0 6 1 2 -1 0 1 7 8 0 -1 1 7 9 0 0 0 7 1 0 -1 0 0 7 1 1 1 -1 1 7 1 2 -1 0 0 8 1 0 -1 1 -1 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 -1 9 1 1 -1 0 1 9 1 2 -1 0 0

### Primitive - Information

Space group	<i>I</i> 432
Unit cell lattice	(2.07055, 2.07055, 2.07055)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.5)
Coordinates, edge 1	(0.0, 0.25, 0.5) ↔ (0.0, 0.5, 0.25)
Coordinates, edge 2	(0.0, 0.25, 0.5) ↔ (0.25, 0.5, 0.0)
Shortest edge length	0.73205
Average edge length	1.00000
Longest edge length	1.26795
Shortest non-bonded distance	1.03528
Smallest angle between edges, degrees	30.00000
Average angle between edges, degrees	98.02422
Largest angle between edges, degrees	146.44269

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 1 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 5 0 1 0 2 3 -1 0 0 2 3 0 0 0 2 4 0 0 0 2 4 0 0 1 2 6  
0 0 -1 2 6 0 0 0 3 5 -1 1 0 3 5 0 0 1 3 6 0 1 -1 3 6 1 0 0 4 5 0 -1 0 4 5 0 0 0 4 6 0 0 -2 4 6 0 0 -1 5 6 0 1 -2 5 6 1 0 -1

**Delauney-Dress-symbol** <1.1:192:76 75 126 125 20 19 102 101 160 159 82 81 136 135 56 55 104 103 124 123 46 45 50 49 178 177 88 87  
170 169 148 147 98 97 140 139 94 93 80 79 52 51 122 121 78 77 134 133 176 175 154 153 180 179 92 91 190 189 108 107 166 165 128 127  
158 157 172 171 192 191 138 137 146 145 168 167 188 187 142 141 164 163 130 129 184 183 150 149 162 161 186 185 182 181 174 173,16  
3 5 7 9 11 13 15 32 19 21 23 25 27 29 31 48 35 37 39 41 43 45 47 64 51 53 55 57 59 61 63 80 67 69 71 73 75 77 79 96 83 85 87 89 91 93 95  
112 99 101 103 105 107 109 111 128 115 117 119 121 123 125 127 144 131 133 135 137 139 141 143 160 147 149 151 153 155 157 159 176  
163 165 167 169 171 173 175 192 179 181 183 185 187 189 191,2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52  
54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130  
132 134 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164 166 168 170 172 174 176 178 180 182 184 186 188 190 192:3 3 3  
3 3,8 8 8 8 8 8 8 8 8 8 8 8>

**SI.4.18.** [3, 8] on 2223<sub>12</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.04419, 2.04419, 2.04419)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.52055, 0.22945)
Coordinates, edge 1	(0.125, 0.52055, 0.22945) ↔ (0.375, -0.02055, 0.22945)
Coordinates, edge 2	(0.125, 0.52055, 0.22945) ↔ (0.22945, 0.125, 0.52055)
Coordinates, edge 3	(0.125, 0.52055, 0.22945) ↔ (0.27055, 0.375, 0.52055)
Shortest edge length	0.72878
Average edge length	1.00000
Longest edge length	1.21845
Shortest non-bonded distance	0.51790
Smallest angle between edges, degrees	28.36866
Average angle between edges, degrees	64.53647
Largest angle between edges, degrees	149.52205

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 3 1 -1 0 2 5 0 0 0 2 7 0 -1 0 2 8 0 0 0 2 9 0 0 0 3 4 -1 0 0 3 6 0 0 0 3 8 -1 1 0 3 9 0 0 0 4 5 0 0 0 4 6 0 0 0 4 6 1 0 0 4 1 0 0 0 4 1 0 0 1 4 1 1 0 0 0 5 7 0 -1 0 5 7 0 0 0 5 10 0 0 1 5 1 1 0 0 0 5 1 1 0 0 1 6 8 -1 1 0 6 1 0 -1 0 1 6 1 0 0 0 0 6 1 2 0 0 0 7 9 0 1 0 7 1 1 0 0 1 7 1 1 0 1 0 7 1 2 1 1 -1 8 9 0 0 0 8 9 1 -1 0 8 1 0 1 -1 0 8 1 2 1 -1 0 8 1 2 2 -1 1 9 1 1 0 -1 1 9 1 2 1 -1 0 9 1 2 1 0 -1 1 0 1 1 0 0 0 1 0 1 2 1 0 -1 1 1 1 2 1 0 -1

#### Gyroid1 - Information

RCSR-ID	<b>lcv-e</b>
Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(3.6822, 3.6822, 3.6822)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.26591, 0.51591)
Coordinates, edge 1	(0.125, 0.26591, 0.51591) ↔ (0.375, 0.26591, 0.48409)
Coordinates, edge 2	(0.125, 0.26591, 0.51591) ↔ (0.01591, 0.375, 0.73409)
Coordinates, edge 3	(0.125, 0.26591, 0.51591) ↔ (0.26591, 0.48409, 0.375)
Shortest edge length	0.92797
Average edge length	1.00000
Longest edge length	1.08806
Shortest non-bonded distance	1.66046
Smallest angle between edges, degrees	52.92264
Average angle between edges, degrees	96.75453
Largest angle between edges, degrees	169.75800

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 4 0 0 0 2 7 1 0 0 2 8 0 0 0 2 9 0 0 0 3 4 0 0 0 3 9 0 0 0 3 1 0 0 0 3 1 1 0 0 4 6 0 0 0 4 1 0 0 1 0 4 1 2 0 0 0 5 6 0 0 0 5 7 0 0 0 5 8 -1 0 0 5 1 1 0 0 1 5 1 2 0 -1 1 6 7 0 0 0 6 1 0 0 1 0 6 1 2 0 0 0 7 8 -1 0 0 7 9 -1 0 0 8 9 0 0 0 8 1 1 1 0 1 8 1 2 1 -1 1 9 1 0 0 0 9 1 1 0 0 0 1 0 1 1 0 0 0 1 0 1 2 0 -1 0 1 1 1 2 0 -1 0

#### Gyroid2 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.56486, 1.56486, 1.56486)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.02997, 0.27997, 0.125)
Coordinates, edge 1	(0.02997, 0.27997, 0.125) ↔ (0.02997, -0.27997, 0.375)
Coordinates, edge 2	(0.02997, 0.27997, 0.125) ↔ (0.375, -0.02997, 0.77997)
Coordinates, edge 3	(0.02997, 0.27997, 0.125) ↔ (0.125, -0.02997, 0.22003)
Shortest edge length	0.52864
Average edge length	1.00000
Longest edge length	1.25588
Shortest non-bonded distance	0.13264
Smallest angle between edges, degrees	17.74220
Average angle between edges, degrees	81.76322
Largest angle between edges, degrees	176.45610

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 3 0 0 0 1 4 0 0 0 1 4 1 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 4 0 -1 0 2 4 1 0 0 2 7 0 -1 0 2 8 0 0 0 2 9 0 0 0 3 7 0 -1 0 3 7 0 0 0 3 8 0 0 1 3 10 -1 2 4 3 1 0 0 0 3 1 1 0 0 4 5 0 0 0 4 6 -1 0 0 4 8 0 1 0 4 9 -1 0 0 5 6 -1 0 0 5 6 0 0 0 5 9 0 1 -1 5 1 1 -1 1 2 5 1 2 0 0 0 5 1 2 2 3 -4 6 7 0 -1 1 6 1 0 0 1 6 1 2 1 0 0 6 1 2 2 3 -4 7 1 0 -1 2 4 7 1 0 0 1 0 7 1 2 1 1 -1 8 9 -1 -1 0 8 9 0 0 0 8 10 -1 2 3 8 11 -1 2 3 8 1 1 0 0 -1 9 1 1 -1 2 3 9 1 1 1 1 -1 9 1 2 2 2 -3 1 0 1 1 0 0 0 1 0 1 2 2 3 -5 1 1 1 2 1 1 -2

## **Primitive - Information**

Space group	<i>P432</i>
Unit cell lattice	(1.34771, 1.34771, 1.34771)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25253, 0.25253)
Coordinates, edge 1	(0.0, 0.25253, 0.25253) ↔ (0.0, 0.25253, 0.74747)
Coordinates, edge 2	(0.0, 0.25253, 0.25253) ↔ (0.74747, 0.74747, 0.0)
Coordinates, edge 3	(0.0, 0.25253, 0.25253) ↔ (0.25253, 0.74747, 0.0)
Shortest edge length	0.66703
Average edge length	1.00000
Longest edge length	1.25521
Shortest non-bonded distance	0.48131
Smallest angle between edges, degrees	28.93300
Average angle between edges, degrees	78.71416
Largest angle between edges, degrees	158.79010

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 2 3 0 -1 0 2 3 1 0 0 2 5 0 0 0 2 7 0 -1 0 2 8 0 0 0 2 9 0 0 0 3 4 0 0 0 3 6 -1 0 0 3 8 0 1 0 3 9 -1 0 0 4 6 -1 0 0 4 6 0 0 0 4 9 0 0 1 4 1 0 0 0 4 1 0 0 1 -2 4 1 1 0 0 5 7 0 -1 0 5 7 0 0 0 5 8 1 2 -1 5 1 1 0 0 5 1 2 0 0 0 5 1 2 1 2 -2 6 7 1 0 -1 6 1 0 0 0 6 1 0 1 1 -2 6 1 2 1 1 -1 7 1 0 0 1 -1 7 1 2 0 1 0 7 1 2 1 2 -2 8 9 -1 -1 0 8 9 0 0 0 8 1 1 -1 -2 1 8 1 1 0 0 -1 8 1 2 0 0 -1 9 1 0 0 0 -1 9 1 1 0 -1 1 9 1 1 0 0 -1 1 0 1 1 0 -1 2 1 0 1 2 1 1 -1 1 1 1 2 0 0 0

**SI.4.19.** [3, 8] on 2223<sub>13</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.95042, 1.95042, 1.95042)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.0, 0.17404)
Coordinates, edge 1	(0.0, 0.0, 0.17404) ↔ (0.25, -0.25, 0.57596)
Coordinates, edge 2	(0.0, 0.0, 0.17404) ↔ (0.07596, 0.25, 0.25)
Coordinates, edge 3	(0.0, 0.0, 0.17404) ↔ (0.32596, -0.5, 0.0)
Shortest edge length	0.53071
Average edge length	1.00000
Longest edge length	1.21262
Shortest non-bonded distance	0.48006
Smallest angle between edges, degrees	25.84367
Average angle between edges, degrees	92.35039
Largest angle between edges, degrees	147.58000

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 7 0 1 0 2 8 0 0 0 2 9 0 0 0 2 1 0  
0 0 0 2 1 0 0 0 1 2 1 1 0 0 0 3 4 -1 0 0 3 5 0 0 0 3 6 -1 0 0 3 1 0 0 0 0 3 1 2 0 0 0 4 7 0 0 0 4 8 4 1 0 4 9 4 2 4 4 1 1 3 1 2 4 1 2 -1 -1 4 1 2 1 0 0 5 7  
0 0 0 5 7 1 1 1 5 9 1 0 1 5 1 0 0 -1 0 5 1 1 0 -1 -1 5 1 2 0 0 0 6 8 0 0 0 6 8 1 0 -1 6 9 1 1 3 6 1 0 1 0 6 1 1 1 3 6 1 2 -3 -1 0 7 9 0 -1 0 7 1 0 0 -1 0 7  
1 2 -1 -1 8 9 0 1 4 8 1 0 0 0 1 8 1 2 -3 -1 0 9 1 1 -1 -1 2 9 1 1 0 0 0 1 0 1 1 0 0 -1 1 1 1 2 -4 -2 -3

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.88185, 1.88185, 1.88185)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.35522)
Coordinates, edge 1	(0.0, 0.25, 0.35522) ↔ (0.39478, 0.5, 0.75)
Coordinates, edge 2	(0.0, 0.25, 0.35522) ↔ (0.0, 0.25, 0.89478)
Coordinates, edge 3	(0.0, 0.25, 0.35522) ↔ (0.14478, 0.0, 0.75)
Shortest edge length	0.92058
Average edge length	1.00000
Longest edge length	1.15116
Shortest non-bonded distance	0.54750
Smallest angle between edges, degrees	31.72176
Average angle between edges, degrees	70.07033
Largest angle between edges, degrees	145.57112

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 4 0 0 0 2 6 0 0 0 2 7 1 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1  
0 0 0 3 4 0 0 0 3 6 0 0 1 3 7 0 0 0 3 9 0 1 0 3 1 0 0 1 0 3 1 2 0 0 0 4 5 0 0 0 4 8 0 0 0 4 1 1 0 0 4 1 2 0 0 0 5 6 0 0 0 5 9 0 1 -1 5 1 0 1 -1 5 1 1 0 0  
0 5 1 2 0 0 -1 6 9 0 1 -1 6 1 1 0 0 0 6 1 2 0 0 -1 7 8 0 0 0 7 9 -1 0 0 7 1 1 -1 0 0 7 1 2 0 0 8 9 -1 0 0 8 1 0 -1 0 0 8 1 1 -1 0 0 8 1 2 0 0 9 1 0 0 0 1 0  
1 1 0 0 0 1 0 1 2 0 -1 0

#### Gyroid2 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.30961, 1.30961, 1.30961)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.33983)
Coordinates, edge 1	(0.0, 0.25, 0.33983) ↔ (0.5, -0.25, 0.41017)
Coordinates, edge 2	(0.0, 0.25, 0.33983) ↔ (0.25, 0.08983, 0.5)
Coordinates, edge 3	(0.0, 0.25, 0.33983) ↔ (0.66017, -0.5, 0.25)
Shortest edge length	0.44181
Average edge length	1.00000
Longest edge length	1.31379
Shortest non-bonded distance	0.36725
Smallest angle between edges, degrees	11.41397
Average angle between edges, degrees	94.00394
Largest angle between edges, degrees	176.33087

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 7 0 0 0 2 8 0 3 -3 2 9 0 0 0 2 9  
0 0 1 2 1 0 0 0 0 2 1 1 0 0 0 3 4 -1 0 0 3 5 -1 0 0 3 6 0 0 0 3 9 0 0 0 3 1 2 0 0 0 4 7 0 0 0 4 7 1 0 -1 4 9 1 0 0 4 1 0 1 3 -1 4 1 1 1 3 -1 4 1 2 -2 -3 3 5 7  
3 3 -3 5 8 0 0 0 5 1 0 3 6 -3 5 1 1 2 2 -1 5 1 2 -1 -4 3 5 1 2 1 0 0 6 8 0 0 0 6 8 1 4 -3 6 9 0 -3 3 6 1 0 1 0 6 1 1 0 -3 2 6 1 2 0 0 0 7 9 0 0 1 7 1 0 0 3 0  
7 1 2 -2 -3 3 8 9 0 -3 3 8 1 0 0 -3 3 8 1 2 -1 -4 3 9 1 1 0 0 -1 1 0 1 1 -1 -4 2 1 0 1 1 0 0 0 1 1 1 2 -3 -6 4

## **Primitive - Information**

Space group	P432
Unit cell lattice	(1.60582, 1.60582, 1.60582)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.23243, 0.5)
Coordinates, edge 1	(0.0, 0.23243, 0.5) ↔ (0.5, 0.76757, 1.0)
Coordinates, edge 2	(0.0, 0.23243, 0.5) ↔ (0.0, 0.5, 0.23243)
Coordinates, edge 3	(0.0, 0.23243, 0.5) ↔ (0.5, 0.0, 0.76757)
Shortest edge length	0.60765
Average edge length	1.00000
Longest edge length	1.42401
Shortest non-bonded distance	0.52784
Smallest angle between edges, degrees	20.39902
Average angle between edges, degrees	90.01252
Largest angle between edges, degrees	159.23064

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 1 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 2 3 -1 0 0 2 4 -1 0 0 2 6 0 0 0 2 7 0 0 0 2 9 0 0 0 2 1 0 0 0 3 5 0 0 0 3 5 0 0 1 3 9 0 1 0 3 1 0 1 0 0 3 1 1 0 0 0 3 1 2 0 0 4 5 1 -1 0 4 8 0 0 4 9 0 2 1 4 9 1 0 0 4 1 1 0 1 1 4 1 2 1 -1 -1 5 6 0 0 0 5 9 0 1 0 5 1 0 1 0 -1 5 1 2 0 0 -1 6 8 -1 -1 0 6 1 0 0 0 6 1 0 1 0 -1 6 1 1 -1 1 1 6 1 2 -1 1 1 7 8 0 -2 -1 7 8 0 0 7 9 0 0 0 7 1 0 1 1 0 7 1 1 -1 2 2 7 1 2 0 0 0 8 9 0 2 1 8 1 0 1 1 0 8 1 2 0 2 1 9 1 1 0 -1 0 1 0 1 1 -2 1 2 1 1 1 2 0 0 0 1 1 1 2 1 -2 -2

**SI.4.20.** [3, 8] on 2223<sub>14</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.82511, 1.82511, 1.82511)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.59195, 0.15805)
Coordinates, edge 1	(0.125, 0.59195, 0.15805) ↔ (0.34195, 0.375, -0.40805)
Coordinates, edge 2	(0.125, 0.59195, 0.15805) ↔ (0.34195, 0.125, -0.09195)
Coordinates, edge 3	(0.125, 0.59195, 0.15805) ↔ (0.375, 0.90805, 0.15805)
Shortest edge length	0.73554
Average edge length	1.00000
Longest edge length	1.17518
Shortest non-bonded distance	0.14774
Smallest angle between edges, degrees	38.13173
Average angle between edges, degrees	100.57945
Largest angle between edges, degrees	172.80352

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 3 0 0 0 2 4 0 0 0 2 5 1 0 0 2 7 0 1 0 2 8  
1 0 0 2 1 0 0 0 2 1 1 0 0 0 3 4 -9 -3 7 3 6 0 0 0 3 9 0 0 1 3 10 -7 -3 6 3 11 0 0 0 3 12 0 0 0 4 6 9 3 -7 4 7 0 0 0 4 8 1 0 0 4 1 0 0 -1 0 4 1 2 9 3 -7 5  
6 0 0 0 5 7 6 3 -5 5 8 0 0 0 5 9 6 3 -5 5 10 -1 0 0 5 1 2 3 2 -3 6 8 -5 -1 4 6 1 0 -9 -4 7 6 1 1 -2 -1 1 6 1 2 3 2 -3 7 9 0 0 0 7 1 0 0 -1 0 7 1 1 0 -1 0 7 1 2  
-3 -1 2 8 9 0 0 0 8 1 1 3 0 -3 8 1 2 8 3 -7 9 1 0 -7 -3 5 9 1 1 3 0 -3 9 1 2 0 0 -1 1 0 1 1 7 3 -6 1 1 1 2 -3 0 2

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.67867, 2.67867, 2.67867)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.16736, 0.41736)
Coordinates, edge 1	(0.125, 0.16736, 0.41736) ↔ (0.16736, 0.58264, 0.375)
Coordinates, edge 2	(0.125, 0.16736, 0.41736) ↔ (0.16736, 0.41736, 0.125)
Coordinates, edge 3	(0.125, 0.16736, 0.41736) ↔ (0.375, 0.16736, 0.58264)
Shortest edge length	0.80279
Average edge length	1.00000
Longest edge length	1.12393
Shortest non-bonded distance	1.13052
Smallest angle between edges, degrees	43.38997
Average angle between edges, degrees	99.29195
Largest angle between edges, degrees	171.12239

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 3 0 0 0 2 4 1 0 0 2 5 0 0 0 2 7 1 0 0 2 8 0  
1 0 2 1 0 0 0 2 1 1 0 0 0 3 4 0 0 0 3 5 0 0 1 3 6 0 1 0 3 8 0 1 0 3 1 1 0 0 1 3 1 2 0 0 0 4 7 0 0 0 4 9 0 1 0 4 1 0 -1 0 0 4 1 1 -1 1 0 4 1 2 0 0 0 5 6 -1 1  
-1 5 9 0 0 0 5 10 -1 0 0 5 1 1 0 0 0 5 1 2 0 0 -1 6 7 0 0 0 6 8 0 0 0 6 9 1 -1 1 6 1 0 0 -1 1 6 1 1 0 -1 1 7 8 0 0 1 7 1 0 0 -1 1 7 1 1 -1 0 0 7 1 2 0 -1 0 8 9  
0 0 0 8 1 0 0 -1 0 8 1 2 0 -1 -1 9 1 0 -1 -1 0 9 1 1 -1 0 0 9 1 2 0 -1 -1 1 0 1 2 1 0 -1 1 1 1 2 1 -1 0

#### Gyroid2 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.32508, 1.32508, 1.32508)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25052, 0.375, 0.49948)
Coordinates, edge 1	(0.25052, 0.375, 0.49948) ↔ (0.625, 0.00052, 1.25052)
Coordinates, edge 2	(0.25052, 0.375, 0.49948) ↔ (0.50052, -0.24948, 0.125)
Coordinates, edge 3	(0.25052, 0.375, 0.49948) ↔ (0.25052, 0.625, 1.00052)
Shortest edge length	0.74198
Average edge length	1.00000
Longest edge length	1.21773
Shortest non-bonded distance	0.00196
Smallest angle between edges, degrees	37.42719
Average angle between edges, degrees	100.55277
Largest angle between edges, degrees	173.43467

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 1 2 -9 6 2 6 0 0 0 2 7 0 1 0 2  
1 0 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 5 0 0 0 3 6 0 0 1 3 7 0 0 0 3 9 2 -1 2 3 1 0 -6 5 -3 3 1 1 -5 3 -2 3 1 2 0 0 1 4 7 0 1 0 4 8 1 0 0 4 9 0 0 0 4 1 0 -8 6 -5  
4 1 1 -5 4 -2 4 1 2 -5 4 -2 5 8 0 0 0 5 9 2 -1 2 5 1 0 -1 2 9 -6 5 1 1 -1 2 9 -6 5 1 2 -6 4 -2 6 7 0 0 0 6 8 9 -7 5 6 9 9 -7 5 6 1 1 -5 3 -3 6 1 2 0 0 0 7 8 9 -7  
5 7 1 0 0 -1 0 7 1 1 -5 3 -2 8 9 0 0 0 8 1 0 -9 6 -5 8 1 2 -6 4 -2 9 1 0 -8 6 -5 9 1 1 -1 4 1 0 -8 1 0 1 2 6 -5 4 1 1 1 2 0 0 0

## **Primitive - Information**

RCSR-ID	dgo
Space group	P432
Unit cell lattice	(2.17792, 2.17792, 2.17792)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.30936, 0.30936)
Coordinates, edge 1	(0.0, 0.30936, 0.30936) $\leftrightarrow$ (0.30936, 0.0, 0.69064)
Coordinates, edge 2	(0.0, 0.30936, 0.30936) $\leftrightarrow$ (0.30936, 0.0, 0.30936)
Coordinates, edge 3	(0.0, 0.30936, 0.30936) $\leftrightarrow$ (0.0, 0.30936, 0.69064)
Shortest edge length	0.83040
Average edge length	1.00000
Longest edge length	1.26391
Shortest non-bonded distance	1.17436
Smallest angle between edges, degrees	41.07179
Average angle between edges, degrees	99.60816
Largest angle between edges, degrees	169.94561

**Primitive - Systre-key** 312000130001400015000160001700018000190002300024000251002710028  
 010210002110034-1-113600039001310-1-113110003120004611-147100480004100-1041211-15  
 6000570005801059010510-100512-10067-1-11610-1-216110-10612-1007900071110-171201-18900  
 08100-108110-10812-1-10910-1-1091110-191200-1101111-11112-100

**SI.4.21.** [3, 8] on 2223<sub>21</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.04447, 2.04447, 2.04447)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.22949, 0.52051)
Coordinates, edge 1	(0.125, 0.22949, 0.52051) ↔ (0.27051, 0.52051, 0.375)
Coordinates, edge 2	(0.125, 0.22949, 0.52051) ↔ (0.375, 0.22949, -0.02051)
Coordinates, edge 3	(0.125, 0.22949, 0.52051) ↔ (0.22949, 0.52051, 0.125)
Shortest edge length	0.72871
Average edge length	1.00000
Longest edge length	1.21849
Shortest non-bonded distance	0.51795
Smallest angle between edges, degrees	28.36952
Average angle between edges, degrees	64.54086
Largest angle between edges, degrees	149.53574

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 3 1 -1 0 2 5 0 0 0 2 7 0 -1 0 2 8 0 0 0 2 9 0 0 0 3 4 -1 0 0 3 6 0 0 0 3 8 -1 1 0 3 9 0 0 0 4 5 0 0 0 4 6 0 0 0 4 6 1 0 0 4 1 0 0 0 4 1 0 0 1 4 1 1 0 0 0 5 7 0 -1 0 5 7 0 0 0 5 10 0 0 1 5 1 1 0 0 0 5 1 1 0 0 1 6 8 -1 1 0 6 1 0 -1 0 1 6 1 0 0 0 0 6 1 2 0 0 0 7 9 0 1 0 7 1 1 0 0 1 7 1 1 0 1 0 7 1 2 1 1 -1 8 9 0 0 0 8 9 1 -1 0 8 1 0 1 -1 0 8 1 2 1 -1 0 8 1 2 2 -1 -1 9 1 1 0 -1 1 9 1 2 1 -1 0 9 1 2 1 0 -1 1 0 1 1 0 0 0 1 0 1 2 1 0 -1 1 1 1 2 1 0 -1

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.56486, 1.56486, 1.56486)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.22003, 0.375, 0.47003)
Coordinates, edge 1	(0.22003, 0.375, 0.47003) ↔ (0.52997, 0.27997, 0.375)
Coordinates, edge 2	(0.22003, 0.375, 0.47003) ↔ (0.77997, 0.125, 0.47003)
Coordinates, edge 3	(0.22003, 0.375, 0.47003) ↔ (0.52997, -0.27997, 0.125)
Shortest edge length	0.52864
Average edge length	1.00000
Longest edge length	1.25588
Shortest non-bonded distance	0.13264
Smallest angle between edges, degrees	17.74220
Average angle between edges, degrees	81.76322
Largest angle between edges, degrees	176.45610

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 3 0 0 0 1 4 0 0 0 1 4 1 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 4 0 -1 0 2 4 1 0 0 2 7 0 -1 0 2 8 0 0 0 2 9 0 0 0 3 7 0 -1 0 3 7 0 0 0 3 8 0 0 1 3 10 -1 -2 4 3 1 0 0 0 0 3 1 1 0 0 0 4 5 0 0 0 4 6 -1 0 0 4 8 0 1 0 4 9 -1 0 0 5 6 -1 0 0 5 6 0 0 0 5 9 0 1 -1 5 1 1 -1 -1 2 5 1 2 0 0 0 5 1 2 2 3 -4 6 7 0 -1 1 6 1 0 0 0 1 6 1 2 1 0 0 6 1 2 2 3 -4 7 1 0 -1 -2 4 7 1 0 0 1 0 7 1 2 1 1 -1 8 9 -1 -1 0 8 9 0 0 0 8 10 -1 -2 3 8 1 1 -2 3 8 1 1 0 0 -1 9 1 1 -1 -2 3 9 1 1 1 1 -1 9 1 2 2 2 -3 1 0 1 1 0 0 0 1 0 1 2 2 3 -5 1 1 1 2 1 1 -2

#### Gyroid2 - Information

RCSR-ID	lcv-e
Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(3.68207, 3.68207, 3.68207)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0159, 0.125, 0.2341)
Coordinates, edge 1	(0.0159, 0.125, 0.2341) ↔ (0.2341, -0.0159, 0.375)
Coordinates, edge 2	(0.0159, 0.125, 0.2341) ↔ (0.125, 0.2341, 0.0159)
Coordinates, edge 3	(0.0159, 0.125, 0.2341) ↔ (0.0159, -0.125, 0.2659)
Shortest edge length	0.92793
Average edge length	1.00000
Longest edge length	1.08804
Shortest non-bonded distance	1.66044
Smallest angle between edges, degrees	52.91927
Average angle between edges, degrees	96.75238
Largest angle between edges, degrees	169.76468

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 4 0 0 0 2 7 1 0 0 2 8 0 0 0 2 9 0 0 0 3 4 0 0 0 3 9 0 0 0 3 1 0 0 0 0 3 1 1 0 0 0 4 6 0 0 0 4 1 0 0 1 0 4 1 2 0 0 0 5 6 0 0 0 5 7 0 0 0 5 8 -1 0 0 5 1 1 0 0 1 5 1 2 0 -1 1 6 7 0 0 0 6 1 0 0 1 0 6 1 2 0 0 0 7 8 -1 0 0 7 9 -1 0 0 8 9 0 0 0 8 1 1 1 0 1 8 1 2 1 -1 1 9 1 0 0 0 9 1 1 0 0 0 1 0 1 1 0 0 0 1 0 1 2 0 -1 0 1 1 1 2 0 -1

## **Primitive - Information**

Space group	P432
Unit cell lattice	(1.34766, 1.34766, 1.34766)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25251, 0.25251)
Coordinates, edge 1	(0.0, 0.25251, 0.25251) ↔ (0.25251, 0.74749, 0.0)
Coordinates, edge 2	(0.0, 0.25251, 0.25251) ↔ (0.0, 0.25251, 0.74749)
Coordinates, edge 3	(0.0, 0.25251, 0.25251) ↔ (0.74749, 0.74749, 0.0)
Shortest edge length	0.66705
Average edge length	1.00000
Longest edge length	1.25520
Shortest non-bonded distance	0.48126
Smallest angle between edges, degrees	28.93504
Average angle between edges, degrees	78.71178
Largest angle between edges, degrees	158.78579

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 2 3 0 -1 0 2 3 1 0 0 2 5 0 0 0 2 7 0 -1 0 2 8 0 0 0 2 9 0 0 0 3 4 0 0 0 3 6 -1 0 0 3 8 0 1 0 3 9 -1 0 0 4 6 -1 0 0 4 6 0 0 0 4 9 0 0 1 4 1 0 0 0 4 1 0 0 1 -2 4 1 1 0 0 5 7 0 -1 0 5 7 0 0 0 5 8 1 2 -1 5 1 1 0 0 5 1 2 0 0 0 5 1 2 1 2 -2 6 7 1 0 -1 6 1 0 0 0 6 1 0 1 1 -2 6 1 2 1 1 -1 7 1 0 0 1 -1 7 1 2 0 1 0 7 1 2 1 2 -2 8 9 -1 -1 0 8 9 0 0 0 8 1 1 -1 -2 1 8 1 1 0 0 -1 8 1 2 0 0 -1 9 1 0 0 0 -1 9 1 1 0 -1 1 9 1 1 0 0 -1 1 0 1 1 0 -1 2 1 0 1 2 1 1 -1 1 1 1 2 0 0 0

**SI.4.22.** [3, 8] on 2223<sub>23</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.09668, 2.09668, 2.09668)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.52473, 0.22527)
Coordinates, edge 1	(0.125, 0.52473, 0.22527) ↔ (0.125, -0.02473, 0.27473)
Coordinates, edge 2	(0.125, 0.52473, 0.22527) ↔ (0.27473, 0.125, -0.02473)
Coordinates, edge 3	(0.125, 0.52473, 0.22527) ↔ (0.27473, 0.375, 0.52473)
Shortest edge length	0.76897
Average edge length	1.00000
Longest edge length	1.15669
Shortest non-bonded distance	0.51498
Smallest angle between edges, degrees	31.80933
Average angle between edges, degrees	72.80616
Largest angle between edges, degrees	155.28304

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 1 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 5 -1 0 0 2 7 -1 0 0 2 9 0 0 0 2 1 0 0 0 0 3 5 0 0 0 3 6 0 0 0 3 6 0 0 1 3 8 0 1 0 3 1 0 0 0 0 3 1 1 0 0 0 4 7 -1 0 0 4 8 0 0 0 4 9 0 0 0 4 9 1 -1 0 4 1 0 -1 0 -1 4 1 2 0 0 0 5 6 0 0 1 5 8 0 0 0 5 8 0 1 0 5 9 1 0 0 5 1 2 1 -1 0 6 7 0 0 0 6 1 0 0 0 -1 6 1 1 0 0 0 6 1 2 1 -1 -1 7 9 2 -1 0 7 1 0 0 0 -1 7 1 0 1 0 0 7 1 1 1 0 1 8 9 1 -1 0 8 1 1 0 -1 0 8 1 2 1 -1 0 9 1 1 -1 1 1 9 1 2 0 0 0 1 0 1 1 0 0 1 1 0 1 2 1 0 1 1 1 2 1 -1 -1 1 1 1 2 1 0 0

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.82921, 2.82921, 2.82921)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.12508, 0.375, 0.37508)
Coordinates, edge 1	(0.12508, 0.375, 0.37508) ↔ (0.37492, 0.375, 0.62492)
Coordinates, edge 2	(0.12508, 0.375, 0.37508) ↔ (0.375, 0.37508, 0.12508)
Coordinates, edge 3	(0.12508, 0.375, 0.37508) ↔ (0.12492, 0.12508, 0.625)
Shortest edge length	0.99963
Average edge length	1.00000
Longest edge length	1.00012
Shortest non-bonded distance	1.00060
Smallest angle between edges, degrees	59.97314
Average angle between edges, degrees	88.58129
Largest angle between edges, degrees	179.98139

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 0 0 2 7 1 0 0 2 8 1 0 0 2 9 0 0 0 2 1 0 0 0 3 4 0 0 0 3 8 1 0 0 3 9 0 0 0 3 1 0 0 0 0 3 1 1 0 0 0 4 5 0 0 0 4 6 0 0 1 4 9 0 1 0 4 1 0 0 0 4 1 2 0 0 0 5 6 0 0 0 5 8 0 0 0 5 1 0 0 0 5 1 2 0 0 -1 6 7 0 0 0 6 1 0 0 0 -1 6 1 1 0 1 -1 6 1 2 0 0 -1 7 8 0 0 0 7 9 -1 0 0 7 1 1 -1 0 0 7 1 2 0 0 -1 8 1 1 -1 0 0 8 1 2 0 0 -1 9 1 0 0 -1 0 9 1 1 0 0 9 1 2 0 -1 0 1 1 0 1 0 1 1 2 0 -1 0

#### Gyroid2 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.32962, 1.32962, 1.32962)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.12188, 0.125, 0.12812)
Coordinates, edge 1	(0.12188, 0.125, 0.12812) ↔ (0.37812, 0.125, 0.87188)
Coordinates, edge 2	(0.12188, 0.125, 0.12812) ↔ (0.87188, -0.37812, 0.375)
Coordinates, edge 3	(0.12188, 0.125, 0.12812) ↔ (0.12812, -0.12188, 0.375)
Shortest edge length	0.46430
Average edge length	1.00000
Longest edge length	1.24487
Shortest non-bonded distance	0.01016
Smallest angle between edges, degrees	21.18601
Average angle between edges, degrees	97.67259
Largest angle between edges, degrees	161.98520

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 1 0 2 8 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 0 0 0 1 2 1 1 0 0 3 4 0 0 0 3 5 -1 0 0 3 6 -1 0 0 3 1 0 0 0 0 3 1 1 -6 -5 -1 4 6 2 1 0 4 7 -6 -4 -1 4 7 0 0 0 4 8 3 1 -1 4 1 1 -6 -5 -1 4 1 2 0 0 0 5 7 0 0 0 5 1 0 0 -1 1 5 1 1 -5 -5 -1 5 1 1 0 -1 0 5 1 2 -9 -7 -2 6 7 -8 -5 -1 6 8 0 0 0 6 8 1 0 -1 6 9 1 1 2 6 1 0 1 0 7 9 9 6 3 7 1 1 0 -1 0 7 1 2 0 0 0 8 9 1 1 2 8 1 0 0 0 1 8 1 2 -3 -1 1 9 1 0 0 0 9 1 1 0 0 0 9 1 2 -9 -6 -3 9 1 2 -4 -2 -1 1 0 1 2 -9 -6 -3 1 1 1 2 -4 -2 -1

## **Primitive - Information**

Space group	<i>P</i> 432
Unit cell lattice	(1.04859, 1.04859, 1.04859)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.17713, 0.17713, 0.5)
Coordinates, edge 1	(0.17713, 0.17713, 0.5) ↔ (0.82287, -0.17713, 0.5)
Coordinates, edge 2	(0.17713, 0.17713, 0.5) ↔ (0.5, -0.82287, -0.17713)
Coordinates, edge 3	(0.17713, 0.17713, 0.5) ↔ (0.5, -0.17713, 0.17713)
Shortest edge length	0.60600
Average edge length	1.00000
Longest edge length	1.31084
Shortest non-bonded distance	0.37148
Smallest angle between edges, degrees	15.87526
Average angle between edges, degrees	100.00733
Largest angle between edges, degrees	175.59605

**Primitive - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 1 0 2 7 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 0 0 0 1 2 1 1 0 0 0 3 4 -1 0 0 3 5 -1 0 0 3 6 0 0 0 3 1 0 0 0 3 1 1 -4 -3 -1 4 6 -3 -1 0 4 7 0 0 0 4 7 1 0 -1 4 8 -7 -3 -1 4 9 1 1 3 4 1 0 1 0 0 5 8 0 0 0 5 1 0 0 -1 1 5 1 1 -3 -3 -1 5 1 1 0 -1 0 5 1 2 0 0 0 6 7 4 1 -1 6 8 -4 -2 -1 6 8 0 0 0 6 1 1 -4 -3 -1 6 1 2 8 5 3 7 9 1 1 3 7 1 0 0 0 1 7 1 2 4 4 4 8 9 8 4 4 8 1 1 0 -1 0 8 1 2 8 5 3 9 1 0 0 0 9 1 1 0 0 9 1 2 0 1 -1 9 1 2 3 3 1 1 0 1 2 0 1 -1 1 1 1 2 3 3 1

**Delauney-Dress-symbol** <1:1:192:170 169 110 109 28 27 0 0 66 65 150 149 44 43 64 63 34 33 94 93 180 179 0 0 50 49 108 107 144 143  
 142 141 124 123 0 0 58 57 148 147 96 95 134 133 172 171 0 0 86 85 68 67 84 83 0 0 162 161 102 101 116 115 160 159 146 145 0 0 122 121  
 182 181 186 185 118 117 0 0 130 129 176 175 154 153 0 0 140 139 192 191 174 173 0 0 178 177 0 0 190 189 164 163 188 187 0 0 0,0,16 3 5  
 7 9 11 13 15 32 19 21 23 25 27 29 31 48 35 37 39 41 43 45 47 64 51 53 55 57 59 61 63 80 67 69 71 73 75 77 79 96 83 85 87 89 91 93 95 112  
 99 101 103 105 107 109 111 128 115 117 119 121 123 125 127 144 131 133 135 137 139 141 143 160 147 149 151 153 155 157 159 176 163  
 165 167 169 171 173 175 192 179 181 183 185 187 189 191,2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56  
 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134  
 136 138 140 142 144 146 148 150 152 154 156 158 160 162 164 166 168 170 172 174 176 178 180 182 184 186 188 190 192:12 12 3 12 12 3  
 3 3 3 6 6 3 3 6 6 3 3 3 12 3 6 12 6 3 3 3,8 8 8 8 8 8 8 8 8 8 8>

**SI.4.23.** [3, 8] on 2223<sub>31</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.95056, 1.95056, 1.95056)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.0, 0.1741)
Coordinates, edge 1	(0.0, 0.0, 0.1741) ↔ (0.25, 0.0759, 0.25)
Coordinates, edge 2	(0.0, 0.0, 0.1741) ↔ (0.5, -0.3259, 0.0)
Coordinates, edge 3	(0.0, 0.0, 0.1741) ↔ (0.25, -0.25, 0.5759)
Shortest edge length	0.53069
Average edge length	1.00000
Longest edge length	1.21268
Shortest non-bonded distance	0.48026
Smallest angle between edges, degrees	25.84001
Average angle between edges, degrees	92.35606
Largest angle between edges, degrees	147.60229

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 7 0 1 0 2 8 0 0 0 2 9 0 0 0 2 10  
0 0 0 2 1 0 0 0 1 2 1 1 0 0 0 3 4 -1 0 0 3 5 0 0 0 3 6 -1 0 0 3 1 0 0 0 3 1 2 0 0 0 4 7 0 0 0 4 8 4 1 0 4 9 4 2 4 1 1 3 1 2 4 1 2 -1 -1 4 1 2 1 0 0 5 7  
0 0 0 5 7 1 1 1 5 9 1 0 1 5 1 0 0 -1 0 5 1 1 0 -1 -1 5 1 2 0 0 0 6 8 0 0 0 6 8 1 0 -1 6 9 1 1 3 6 1 0 1 0 6 1 1 1 3 6 1 2 -3 -1 0 7 9 0 -1 0 7 1 0 0 -1 0 7  
1 2 -1 -1 8 9 0 1 4 8 1 0 0 0 1 8 1 2 -3 -1 0 9 1 1 -1 -1 2 9 1 1 0 0 0 1 0 1 1 0 0 -1 1 1 1 2 -4 -2 -3

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.30963, 1.30963, 1.30963)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.41015)
Coordinates, edge 1	(0.0, 0.25, 0.41015) ↔ (0.16015, 0.5, 0.25)
Coordinates, edge 2	(0.0, 0.25, 0.41015) ↔ (0.08985, 1.0, -0.25)
Coordinates, edge 3	(0.0, 0.25, 0.41015) ↔ (0.5, 0.75, 0.33985)
Shortest edge length	0.44179
Average edge length	1.00000
Longest edge length	1.31380
Shortest non-bonded distance	0.36727
Smallest angle between edges, degrees	11.41275
Average angle between edges, degrees	94.00502
Largest angle between edges, degrees	176.33072

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 7 0 0 0 2 8 0 3 -3 2 9 0 0 0 2 9  
0 0 1 2 1 0 0 0 0 2 1 1 0 0 0 3 4 -1 0 0 3 5 -1 0 0 3 6 0 0 0 3 9 0 0 0 3 1 2 0 0 0 4 7 0 0 0 4 7 1 0 -1 4 9 1 0 0 4 1 0 1 3 -1 4 1 1 1 3 -1 4 1 2 -2 -3 3 5 7  
3 3 -3 5 8 0 0 0 5 1 0 3 6 -3 5 1 1 2 2 -1 5 1 2 -1 -4 3 5 1 2 1 0 0 6 8 0 0 0 6 8 1 4 -3 6 9 0 -3 3 6 1 0 1 1 0 6 1 1 0 -3 2 6 1 2 0 0 0 7 9 0 0 1 7 1 0 0 3 0  
7 1 2 -2 -3 3 8 9 0 -3 3 8 1 0 0 -3 3 8 1 2 -1 -4 3 9 1 1 0 0 -1 1 0 1 1 -1 -4 2 1 0 1 1 0 0 0 1 1 1 2 -3 -6 4

#### Gyroid2 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.88185, 1.88185, 1.88185)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.39478)
Coordinates, edge 1	(0.0, 0.25, 0.39478) ↔ (0.25, -0.14478, 0.0)
Coordinates, edge 2	(0.0, 0.25, 0.39478) ↔ (0.25, 0.39478, 0.0)
Coordinates, edge 3	(0.0, 0.25, 0.39478) ↔ (0.0, 0.25, -0.14478)
Shortest edge length	0.92058
Average edge length	1.00000
Longest edge length	1.15116
Shortest non-bonded distance	0.54750
Smallest angle between edges, degrees	31.72176
Average angle between edges, degrees	70.07033
Largest angle between edges, degrees	145.57112

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 4 0 0 0 2 6 0 0 0 2 7 1 0 0 2 9 0 0 0 2 1 0 0 0 2 1 1  
0 0 0 3 4 0 0 0 3 6 0 0 1 3 7 0 0 0 3 9 0 1 0 3 1 0 0 1 0 3 1 2 0 0 0 4 5 0 0 0 4 8 0 0 0 4 1 1 0 0 0 4 1 2 0 0 0 5 6 0 0 0 5 9 0 1 -1 5 1 0 0 1 -1 5 1 1 0 0  
0 5 1 2 0 0 -1 6 9 0 1 -1 6 1 1 0 0 0 6 1 2 0 0 -1 7 8 0 0 0 7 9 -1 0 0 7 1 1 -1 0 0 7 1 2 0 0 0 8 9 -1 0 0 8 1 0 -1 0 0 8 1 1 -1 0 0 8 1 2 0 0 0 9 1 0 0 0 0 1 0  
1 1 0 0 0 1 0 1 2 0 -1 0

## **Primitive - Information**

Space group	<i>P432</i>
Unit cell lattice	(1.60558, 1.60558, 1.60558)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.26771, 0.5)
Coordinates, edge 1	(0.0, 0.26771, 0.5) $\leftrightarrow$ (0.26771, 0.0, 0.5)
Coordinates, edge 2	(0.0, 0.26771, 0.5) $\leftrightarrow$ (0.5, 0.0, 0.73229)
Coordinates, edge 3	(0.0, 0.26771, 0.5) $\leftrightarrow$ (0.5, -0.26771, 1.0)
Shortest edge length	0.60787
Average edge length	1.00000
Longest edge length	1.42406
Shortest non-bonded distance	0.52744
Smallest angle between edges, degrees	20.40615
Average angle between edges, degrees	90.00378
Largest angle between edges, degrees	159.21790

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 1 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 2 3 -1 0 0 2 4 -1 0 0 2 6 0 0 0 2 7 0 0 0 2 9 0 0 0 2 1 0 0 0 3 5 0 0 0 3 5 0 0 1 3 9 0 1 0 3 1 0 1 0 0 3 1 1 0 0 0 3 1 2 0 0 4 5 1 -1 0 4 8 0 0 4 9 0 2 1 4 9 1 0 0 4 1 1 0 1 1 4 1 2 1 -1 -1 5 6 0 0 0 5 9 0 1 0 5 1 0 1 0 -1 5 1 2 0 0 -1 6 8 -1 -1 0 6 1 0 0 0 6 1 0 1 0 -1 6 1 1 -1 1 1 6 1 2 -1 1 1 7 8 0 -2 -1 7 8 0 0 7 9 0 0 0 7 1 0 1 1 0 7 1 1 -1 2 2 7 1 2 0 0 0 8 9 0 2 1 8 1 0 1 1 0 8 1 2 0 2 1 9 1 1 0 -1 0 1 0 1 1 -2 1 2 1 1 1 2 0 0 0 1 1 1 2 1 -2 -2

**SI.4.24.** [3, 8] on 2223<sub>32</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.09668, 2.09668, 2.09668)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.02473, 0.125, 0.22527)
Coordinates, edge 1	(0.02473, 0.125, 0.22527) ↔ (-0.52473, 0.125, 0.27473)
Coordinates, edge 2	(0.02473, 0.125, 0.22527) ↔ (-0.27473, -0.02473, 0.375)
Coordinates, edge 3	(0.02473, 0.125, 0.22527) ↔ (0.27473, -0.02473, 0.625)
Shortest edge length	0.76897
Average edge length	1.00000
Longest edge length	1.15669
Shortest non-bonded distance	0.51498
Smallest angle between edges, degrees	31.80933
Average angle between edges, degrees	72.80616
Largest angle between edges, degrees	155.28304

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 1 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 5 -1 0 0 2 7 -1 0 0 2 9 0 0 0 2 1 0 0 0 1 3 5 0 0 0 3 6 0 0 0 3 6 0 0 1 3 8 0 1 0 3 1 0 0 0 0 3 1 1 0 0 0 4 7 -1 0 0 4 8 0 0 0 4 9 0 0 0 4 9 1 -1 0 4 1 0 -1 0 -1 4 1 2 0 0 0 5 6 0 0 1 5 8 0 0 0 5 8 0 1 0 5 9 1 0 0 5 1 2 1 -1 0 6 7 0 0 0 6 1 0 0 0 -1 6 1 1 0 0 0 6 1 2 1 -1 -1 7 9 2 -1 0 7 1 0 0 0 -1 7 1 0 1 0 0 7 1 1 1 0 1 8 9 1 -1 0 8 1 1 0 8 1 2 1 -1 0 9 1 1 -1 1 1 9 1 2 0 0 0 1 0 1 1 0 0 1 1 0 1 2 1 0 1 1 1 1 1 2 1 -1 -1 1 1 1 2 1 0 0

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.32963, 1.32963, 1.32963)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.37187, 0.37813, 0.375)
Coordinates, edge 1	(0.37187, 0.37813, 0.375) ↔ (0.62813, 1.12187, 0.375)
Coordinates, edge 2	(0.37187, 0.37813, 0.375) ↔ (0.125, 0.37187, 0.62187)
Coordinates, edge 3	(0.37187, 0.37813, 0.375) ↔ (0.125, -0.37187, 0.87813)
Shortest edge length	0.46429
Average edge length	1.00000
Longest edge length	1.24488
Shortest non-bonded distance	0.01018
Smallest angle between edges, degrees	21.18512
Average angle between edges, degrees	97.67302
Largest angle between edges, degrees	161.98744

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 1 0 2 8 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 0 0 0 1 2 1 1 0 0 3 4 0 0 0 3 5 -1 0 0 3 6 -1 0 0 3 1 0 0 0 0 3 1 1 -6 -5 -1 4 6 2 1 0 4 7 -6 -4 -1 4 7 0 0 0 4 8 3 1 -1 4 1 1 -6 -5 -1 4 1 2 0 0 0 5 7 0 0 0 5 1 0 0 -1 1 5 1 1 -5 -5 -1 5 1 1 0 -1 0 5 1 2 -9 -7 -2 6 7 -8 -5 -1 6 8 0 0 0 6 8 1 0 -1 6 9 1 1 2 6 1 0 1 0 7 9 9 6 3 7 1 1 0 -1 0 7 1 2 0 0 0 8 9 1 1 2 8 1 0 0 0 1 8 1 2 -3 -1 1 9 1 0 0 0 0 9 1 1 0 0 0 9 1 2 -9 -6 -3 9 1 2 -4 -2 -1 1 0 1 2 -9 -6 -3 1 1 1 2 -4 -2 -1

#### Gyroid2 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.82925, 2.82925, 2.82925)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.12492, 0.37492, 0.125)
Coordinates, edge 1	(0.12492, 0.37492, 0.125) ↔ (0.12508, 0.125, -0.12492)
Coordinates, edge 2	(0.12492, 0.37492, 0.125) ↔ (-0.12492, 0.12508, 0.125)
Coordinates, edge 3	(0.12492, 0.37492, 0.125) ↔ (0.125, 0.12492, 0.37492)
Shortest edge length	0.99961
Average edge length	1.00000
Longest edge length	1.00012
Shortest non-bonded distance	1.00063
Smallest angle between edges, degrees	59.97203
Average angle between edges, degrees	88.58169
Largest angle between edges, degrees	179.98063

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 0 0 2 7 1 0 0 2 8 1 0 0 2 9 0 0 0 2 1 0 0 0 3 4 0 0 0 3 8 1 0 0 3 9 0 0 0 3 1 0 0 0 0 3 1 1 0 0 0 4 5 0 0 0 4 6 0 0 1 4 9 0 1 0 4 1 0 0 0 4 1 2 0 0 0 5 6 0 0 0 5 8 0 0 0 5 1 0 0 0 5 1 2 0 0 -1 6 7 0 0 0 6 1 0 0 -1 6 1 1 0 1 -1 6 1 2 0 0 -1 7 8 0 0 0 7 9 -1 0 0 7 1 2 0 0 -1 8 1 1 -1 0 0 8 1 2 0 0 -1 9 1 0 0 -1 0 9 1 1 0 0 0 9 1 2 0 0 -1 0 1 1 0 1 0 1 1 2 0 -1 0

## **Primitive - Information**

Space group	<i>P</i> 432
Unit cell lattice	(1.04859, 1.04859, 1.04859)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.17714, 0.17714, 0.5)
Coordinates, edge 1	(0.17714, 0.17714, 0.5) ↔ (0.82286, -0.17714, 0.5)
Coordinates, edge 2	(0.17714, 0.17714, 0.5) ↔ (0.5, -0.17714, 0.17714)
Coordinates, edge 3	(0.17714, 0.17714, 0.5) ↔ (0.5, -0.82286, -0.17714)
Shortest edge length	0.60600
Average edge length	1.00000
Longest edge length	1.31084
Shortest non-bonded distance	0.37149
Smallest angle between edges, degrees	15.87489
Average angle between edges, degrees	100.00727
Largest angle between edges, degrees	175.59457

**Primitive - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 5 0 1 0 2 7 0 0 0 2 9 0 0 0 2 1 0 0 0 2 1 0 0 0 1 2 1 1 0 0 0 3 4 -1 0 0 3 5 -1 0 0 3 6 0 0 0 3 1 0 0 0 0 3 1 1 -4 -3 -1 4 6 -3 -1 0 4 7 0 0 0 4 7 1 0 -1 4 8 -7 -3 -1 4 9 1 1 3 4 1 0 1 0 0 5 8 0 0 0 5 1 0 0 -1 1 5 1 1 -3 -3 -1 5 1 1 0 -1 0 5 1 2 0 0 0 6 7 4 1 -1 6 8 -4 -2 -1 6 8 0 0 0 6 1 1 -4 -3 -1 6 1 2 8 5 3 7 9 1 1 3 7 1 0 0 0 1 7 1 2 4 4 4 8 9 8 4 4 8 1 1 0 -1 0 8 1 2 8 5 3 9 1 0 0 0 9 1 1 0 0 9 1 2 0 1 -1 9 1 2 3 3 1 1 0 1 2 0 1 -1 1 1 1 2 3 3 1

**SI.4.25.** [3, 8] on 2223<sub>41</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.8251, 1.8251, 1.8251)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.09194, 0.125, 0.15806)
Coordinates, edge 1	(0.09194, 0.125, 0.15806) ↔ (0.09194, -0.125, -0.15806)
Coordinates, edge 2	(0.09194, 0.125, 0.15806) ↔ (0.65806, -0.09194, 0.375)
Coordinates, edge 3	(0.09194, 0.125, 0.15806) ↔ (0.34194, -0.09194, 0.625)
Shortest edge length	0.73557
Average edge length	1.00000
Longest edge length	1.17520
Shortest non-bonded distance	0.14779
Smallest angle between edges, degrees	38.13311
Average angle between edges, degrees	100.57921
Largest angle between edges, degrees	172.80123

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 3 0 0 0 2 4 0 0 0 2 5 1 0 0 2 7 0 1 0 2 8  
 1 0 0 2 1 0 0 0 2 1 1 0 0 0 3 4 -9 -3 7 3 6 0 0 0 3 9 0 0 1 3 10 -7 -3 6 3 11 0 0 0 3 12 0 0 0 4 6 9 3 -7 4 7 0 0 0 4 8 1 0 0 4 1 0 0 -1 0 4 1 2 9 3 -7 5  
 6 0 0 0 5 7 6 3 -5 5 8 0 0 0 5 9 6 3 -5 5 1 0 -1 0 0 5 1 2 3 2 -3 6 8 -5 -1 4 6 1 0 -9 -4 7 6 1 1 -2 -1 1 6 1 2 3 2 -3 7 9 0 0 0 7 1 0 0 -1 0 7 1 1 0 -1 0 7 1 2  
 -3 -1 2 8 9 0 0 0 8 1 1 3 0 -3 8 1 2 8 3 -7 9 1 0 -7 -3 5 9 1 1 3 0 -3 9 1 2 0 0 -1 1 0 1 1 7 3 -6 1 1 1 2 -3 0 2

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.32508, 1.32508, 1.32508)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.00052, 0.24948, 0.125)
Coordinates, edge 1	(0.00052, 0.24948, 0.125) ↔ (0.00052, 0.75052, 0.375)
Coordinates, edge 2	(0.00052, 0.24948, 0.125) ↔ (0.375, 1.00052, -0.24948)
Coordinates, edge 3	(0.00052, 0.24948, 0.125) ↔ (0.25052, -0.125, -0.49948)
Shortest edge length	0.74198
Average edge length	1.00000
Longest edge length	1.21773
Shortest non-bonded distance	0.00196
Smallest angle between edges, degrees	37.42719
Average angle between edges, degrees	100.55277
Largest angle between edges, degrees	173.43467

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 1 2 -9 6 2 6 0 0 0 2 7 0 1 0 2  
 1 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 5 0 0 0 3 6 0 0 1 3 7 0 0 0 3 9 2 -1 2 3 1 0 -6 5 -3 3 1 1 -5 3 -2 3 1 2 0 0 1 4 7 0 1 0 4 8 1 0 0 4 9 0 0 0 4 1 0 -8 6 -5  
 4 1 1 -5 4 -2 4 1 2 -5 4 -2 5 8 0 0 0 5 9 2 -1 2 5 1 0 -1 2 9 -6 5 1 1 -1 2 9 -6 5 1 2 -6 4 -2 6 7 0 0 0 6 8 9 -7 5 6 9 9 -7 5 6 1 1 -5 3 -3 6 1 2 0 0 0 7 8 9 -7  
 5 7 1 0 0 -1 0 7 1 1 -5 3 -2 8 9 0 0 0 8 1 0 -9 6 -5 8 1 2 -6 4 -2 9 1 0 -8 6 -5 9 1 1 -1 4 1 0 -8 1 0 1 2 6 -5 4 1 1 1 2 0 0 0

#### Gyroid2 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.67874, 2.67874, 2.67874)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.08261, 0.375, 0.33261)
Coordinates, edge 1	(0.08261, 0.375, 0.33261) ↔ (0.08261, 0.625, 0.16739)
Coordinates, edge 2	(0.08261, 0.375, 0.33261) ↔ (0.125, 0.33261, -0.08261)
Coordinates, edge 3	(0.08261, 0.375, 0.33261) ↔ (0.33261, 0.08261, 0.375)
Shortest edge length	0.80272
Average edge length	1.00000
Longest edge length	1.12380
Shortest non-bonded distance	1.13071
Smallest angle between edges, degrees	43.38730
Average angle between edges, degrees	99.29325
Largest angle between edges, degrees	171.11604

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 3 0 0 0 2 4 1 0 0 2 5 0 0 0 2 7 1 0 0 2 8 0  
 1 0 2 1 0 0 0 2 1 1 0 0 0 3 4 0 0 0 3 5 0 0 1 3 6 0 1 0 3 8 0 1 0 3 1 1 0 0 1 3 1 2 0 0 0 4 7 0 0 0 4 9 0 1 0 4 1 0 -1 0 0 4 1 1 -1 1 0 4 1 2 0 0 0 5 6 -1 1  
 -1 5 9 0 0 0 5 1 0 -1 0 0 5 1 1 0 0 0 5 1 2 0 0 -1 6 7 0 0 0 6 8 0 0 0 6 9 1 -1 1 6 1 0 0 -1 1 6 1 1 0 -1 1 7 8 0 0 1 7 1 0 0 -1 1 7 1 1 -1 0 0 7 1 2 0 -1 0 8 9  
 0 0 0 8 1 0 0 -1 0 8 1 2 0 -1 -1 9 1 0 -1 -1 0 9 1 1 -1 0 0 9 1 2 0 -1 -1 1 0 1 2 1 0 -1 1 1 1 2 1 -1 0

## **Primitive - Information**

RCSR-ID	dgo
Space group	P432
Unit cell lattice	(2.17792, 2.17792, 2.17792)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.30937, 0.30937)
Coordinates, edge 1	(0.0, 0.30937, 0.30937) $\leftrightarrow$ (0.0, 0.30937, 0.69063)
Coordinates, edge 2	(0.0, 0.30937, 0.30937) $\leftrightarrow$ (0.30937, 0.0, 0.69063)
Coordinates, edge 3	(0.0, 0.30937, 0.30937) $\leftrightarrow$ (0.30937, 0.0, 0.30937)
Shortest edge length	0.83037
Average edge length	1.00000
Longest edge length	1.26391
Shortest non-bonded distance	1.17433
Smallest angle between edges, degrees	41.07068
Average angle between edges, degrees	99.60817
Largest angle between edges, degrees	169.94752

**Primitive - Systre-key** 312000130001400015000160001700018000190002300024000251002710028  
 010210002110034-1-113600039001310-1-113110003120004611-147100480004100-1041211-15  
 6000570005801059010510-100512-10067-1-11610-1-216110-10612-1007900071110-171201-18900  
 08100-108110-10812-1-10910-1-1091110-191200-1101111-11112-100

**SI.4.26.** [3, 8] on 23×.

#### Diamond - Information

RCSR-ID	<b>pyc</b>
Space group	<i>Fd̄3m</i>
Unit cell lattice	(3.77131, 3.77131, 3.77131)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.125, 0.43751)
Coordinates, edge 1	(0.125, 0.125, 0.43751) ↔ (0.125, -0.06249, 0.625)
Coordinates, edge 2	(0.125, 0.125, 0.43751) ↔ (0.06249, -0.125, 0.375)
Shortest edge length	0.99996
Average edge length	1.00000
Longest edge length	1.00004
Shortest non-bonded distance	1.41416
Smallest angle between edges, degrees	59.99475
Average angle between edges, degrees	96.24676
Largest angle between edges, degrees	152.72955

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 3 0 0 0 2 4 0 0 0 2 7 0 1 0 2 8 1 0 0 2 1 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 5 0 0 0 3 6 0 1 1 3 9 1 0 0 3 1 0 0 0 3 1 1 0 0 1 3 1 2 0 0 0 4 5 0 0 0 4 6 0 0 0 4 9 1 -1 -1 4 1 0 0 0 0 4 1 1 0 -1 0 4 1 2 0 -1 -1 5 7 0 0 0 5 8 1 -1 0 5 1 0 0 0 5 1 1 0 -1 0 5 1 2 0 -1 0 6 7 0 0 0 6 8 0 0 0 6 1 0 -1 0 0 6 1 1 0 -1 0 6 1 2 0 -1 -1 7 9 0 0 0 7 1 0 -1 0 0 7 1 1 0 -1 0 7 1 2 0 -1 0 8 9 0 0 0 8 1 0 -1 0 0 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 0 9 1 1 -1 0 1 9 1 2 -1 0 0

#### Gyroid1 - Information

RCSR-ID	<b>teo</b>
Space group	<i>I4<sub>1</sub>32</i>
Unit cell lattice	(2.8142, 2.8142, 2.8142)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.45309)
Coordinates, edge 1	(0.0, 0.25, 0.45309) ↔ (0.25, 0.20309, 0.5)
Coordinates, edge 2	(0.0, 0.25, 0.45309) ↔ (0.04691, 0.0, 0.75)
Coordinates, edge 3	(0.0, 0.25, 0.45309) ↔ (0.20309, 0.5, 0.25)
Shortest edge length	0.72790
Average edge length	1.00000
Longest edge length	1.10025
Shortest non-bonded distance	0.96755
Smallest angle between edges, degrees	39.13529
Average angle between edges, degrees	99.18995
Largest angle between edges, degrees	166.21880

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 0 0 0 2 6 1 0 0 2 7 1 0 0 2 1 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 4 0 0 1 3 5 0 0 1 3 6 0 0 0 3 7 0 0 0 3 1 0 0 1 0 3 1 1 -1 -1 1 3 1 2 -1 0 1 4 8 0 0 0 4 9 1 1 0 4 1 0 0 1 -1 4 1 1 0 0 0 4 1 2 -1 0 0 5 8 1 0 0 5 9 0 0 0 5 1 0 0 1 -1 5 1 1 -1 -1 0 5 1 2 0 0 0 6 8 0 0 0 6 9 0 0 1 6 1 0 -1 0 0 6 1 1 -1 0 0 6 1 2 -1 0 1 7 8 0 -1 1 7 9 0 0 0 7 1 0 -1 0 0 7 1 1 1 -1 1 7 1 2 -1 0 0 8 1 0 -1 1 -1 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 -1 9 1 1 -1 -1 0 9 1 2 -1 0 0

#### Gyroid2 - Information

RCSR-ID	<b>teo</b>
Space group	<i>I4<sub>1</sub>32</i>
Unit cell lattice	(2.8142, 2.8142, 2.8142)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.29691)
Coordinates, edge 1	(0.0, 0.25, 0.29691) ↔ (0.25, 0.04691, 0.5)
Coordinates, edge 2	(0.0, 0.25, 0.29691) ↔ (0.25, 0.29691, 0.0)
Coordinates, edge 3	(0.0, 0.25, 0.29691) ↔ (0.04691, 0.5, 0.25)
Shortest edge length	0.72790
Average edge length	1.00000
Longest edge length	1.10025
Shortest non-bonded distance	0.96755
Smallest angle between edges, degrees	39.13529
Average angle between edges, degrees	99.18995
Largest angle between edges, degrees	166.21880

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 1 9 0 0 0 2 4 0 0 0 2 5 0 0 0 2 6 1 0 0 2 7 1 0 0 2 1 0 0 0 2 1 1 0 0 0 2 1 2 0 0 0 3 4 0 0 1 3 5 0 0 1 3 6 0 0 0 3 7 0 0 0 3 1 0 0 1 0 3 1 1 -1 -1 1 3 1 2 -1 0 1 4 8 0 0 0 4 9 1 1 0 4 1 0 0 1 -1 4 1 1 0 0 0 4 1 2 -1 0 0 5 8 1 0 0 5 9 0 0 0 5 1 0 0 1 -1 5 1 1 -1 -1 0 5 1 2 0 0 0 6 8 0 0 0 6 9 0 0 1 6 1 0 -1 0 0 6 1 1 -1 0 0 6 1 2 -1 0 1 7 8 0 -1 1 7 9 0 0 0 7 1 0 -1 0 0 7 1 1 1 -1 1 7 1 2 -1 0 0 8 1 0 -1 1 -1 8 1 1 -1 0 0 8 1 2 -1 0 0 9 1 0 -1 0 -1 9 1 1 -1 -1 0 9 1 2 -1 0 0

## **Primitive - Information**

Space group	<i>I432</i>
Unit cell lattice	(2.07055, 2.07055, 2.07055)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.5)
Coordinates, edge 1	(0.0, 0.25, 0.5) ↔ (0.25, 0.5, 0.0)
Coordinates, edge 2	(0.0, 0.25, 0.5) ↔ (0.0, 0.5, 0.25)
Shortest edge length	0.73205
Average edge length	1.00000
Longest edge length	1.26795
Shortest non-bonded distance	1.03528
Smallest angle between edges, degrees	30.00000
Average angle between edges, degrees	98.02422
Largest angle between edges, degrees	146.44269

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 1 0 0 1 3 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 5 0 1 0 2 3 -1 0 0 2 3 0 0 0 2 4 0 0 0 2 4 0 0 1 2 6 0 0 0 3 5 -1 1 0 3 5 0 0 1 3 6 0 1 -1 3 6 1 0 0 4 5 0 -1 0 4 5 0 0 0 4 6 0 0 -2 4 6 0 0 -1 5 6 0 1 -2 5 6 1 0 -1

**SI.4.27.** [3, 9] on 2\*23.

#### Diamond - Information

RCSR-ID	<b>uty</b>
Space group	$Fd\bar{3}m$
Unit cell lattice	(2.8287, 2.8287, 2.8287)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25004, 0.25004, 0.25004)
Coordinates, edge 1	(0.25004, 0.25004, 0.25004) $\leftrightarrow$ (0.25004, 0.49996, 0.49996)
Coordinates, edge 2	(0.25004, 0.25004, 0.25004) $\leftrightarrow$ (0.0, 0.24996, 0.50004)
Shortest edge length	0.99981
Average edge length	1.00000
Longest edge length	1.00010
Shortest non-bonded distance	1.00038
Smallest angle between edges, degrees	59.98107
Average angle between edges, degrees	95.00122
Largest angle between edges, degrees	179.97682

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 1 1 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 4 -1 0 0 2 5 0 0 0 2 5  
0 0 1 2 7 -1 -1 0 2 7 0 0 1 2 8 0 0 0 3 4 -1 0 0 3 6 0 0 0 3 6 0 0 1 3 7 -1 0 0 3 7 0 0 1 3 8 0 0 0 4 5 0 0 0 4 5 1 0 1 4 6 0 -1 0 4 6 1 0 1 4 8 1 0 0 5 6  
0 0 0 5 7 0 0 0 5 8 0 0 0 5 8 1 0 0 6 7 0 0 0 6 8 0 0 0 6 8 1 1 0 7 8 1 0 0 7 8 1 1 0

#### Gyroid1 - Information

RCSR-ID	<b>utz</b>
Space group	$I4_132$
Unit cell lattice	(2.24715, 2.24715, 2.24715)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.01701, 0.01701, 0.01701)
Coordinates, edge 1	(0.01701, 0.01701, 0.01701) $\leftrightarrow$ (0.01701, -0.01701, 0.48299)
Coordinates, edge 2	(0.01701, 0.01701, 0.01701) $\leftrightarrow$ (0.26701, -0.23299, -0.26701)
Coordinates, edge 3	(0.01701, 0.01701, 0.01701) $\leftrightarrow$ (0.23299, -0.23299, 0.26701)
Shortest edge length	0.93099
Average edge length	1.00000
Longest edge length	1.04990
Shortest non-bonded distance	0.84061
Smallest angle between edges, degrees	49.77635
Average angle between edges, degrees	97.77616
Largest angle between edges, degrees	172.64259

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 1 0 0 2 4 0 0 -1 2 5 -1 -1 -1 2  
5 0 0 0 2 6 0 -1 -1 2 6 0 0 -1 2 8 0 0 0 3 4 0 1 0 3 6 -1 -1 -1 3 6 0 0 0 3 7 -1 0 -1 3 7 -1 0 0 3 8 -1 0 1 4 5 -1 -1 0 4 5 0 -1 0 4 7 -1 -1 -1 4 7 0 0 0 4  
8 0 -1 1 5 6 1 0 0 5 7 0 0 -1 5 8 0 0 0 5 8 0 0 1 6 7 0 1 0 6 8 -1 0 1 6 8 0 0 1 7 8 0 -1 1 7 8 0 0 1

#### Gyroid2 - Information

RCSR-ID	<b>utz</b>
Space group	$I4_132$
Unit cell lattice	(2.24715, 2.24715, 2.24715)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.26701, 0.26701, 0.26701)
Coordinates, edge 1	(0.26701, 0.26701, 0.26701) $\leftrightarrow$ (0.23299, 0.26701, 0.73299)
Coordinates, edge 2	(0.26701, 0.26701, 0.26701) $\leftrightarrow$ (0.01701, 0.48299, 0.51701)
Coordinates, edge 3	(0.26701, 0.26701, 0.26701) $\leftrightarrow$ (0.01701, 0.51701, -0.01701)
Shortest edge length	0.93099
Average edge length	1.00000
Longest edge length	1.04990
Shortest non-bonded distance	0.84061
Smallest angle between edges, degrees	49.77635
Average angle between edges, degrees	97.77616
Largest angle between edges, degrees	172.64259

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 1 0 0 2 4 0 0 -1 2 5 -1 -1 -1 2  
5 0 0 0 2 6 0 -1 -1 2 6 0 0 -1 2 8 0 0 0 3 4 0 1 0 3 6 -1 -1 -1 3 6 0 0 0 3 7 -1 0 -1 3 7 -1 0 0 3 8 -1 0 1 4 5 -1 -1 0 4 5 0 -1 0 4 7 -1 -1 -1 4 7 0 0 0 4  
8 0 -1 1 5 6 1 0 0 5 7 0 0 -1 5 8 0 0 0 5 8 0 0 1 6 7 0 1 0 6 8 -1 0 1 6 8 0 0 1 7 8 0 -1 1 7 8 0 0 1

#### Primitive - Information

RCSR-ID	<b>utx</b>
Space group	<i>I</i> 432
Unit cell lattice	(1.75736, 1.75736, 1.75736)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25, 0.25, 0.25)
Coordinates, edge 1	(0.25, 0.25, 0.25) ↔ (0.25, -0.25, 0.75)
Coordinates, edge 2	(0.25, 0.25, 0.25) ↔ (0.25, 0.25, -0.25)
Shortest edge length	0.87868
Average edge length	1.00000
Longest edge length	1.24264
Shortest non-bonded distance	1.24264
Smallest angle between edges, degrees	45.00000
Average angle between edges, degrees	100.00000
Largest angle between edges, degrees	180.00000

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 2 1 0 0 1 3 0 0 0 1 3 1 -1 1 1 3 1 0 0 1 4 0 0 0 1 4 0 0 1 1 4 0 1 0 2 3 -1 0 0 2 3 0 -1 0 2 3 0 0 0 2  
4 -1 1 -1 2 4 0 0 -1 2 4 0 0 0 3 4 -1 1 0 3 4 -1 2 -1 3 4 0 1 -1

**Delauney-Dress-symbol** <1.1:144:0 0 0 0 70 69 0 0 120 119 94 93 84 83 54 53 28 27 0 0 58 57 0 0 0 50 49 144 143 106 105 122 121 0 0  
136 135 0 0 0 0 74 73 68 67 112 111 0 0 0 0 0 100 99 138 137 90 89 0 0 0 0 130 129 0 0 118 117 102 101 0 0 0 0 0 126 125 140 139 0 0 0  
0 0 0 142 141 0 0 0 0 0 0,18 3 5 7 9 11 13 15 17 36 21 23 25 27 29 31 33 35 54 39 41 43 45 47 49 51 53 72 57 59 61 63 65 67 69 71 90 75 77  
79 81 83 85 87 89 108 93 95 97 99 101 103 105 107 126 111 113 115 117 119 121 123 125 144 129 131 133 135 137 139 141 143,2 4 6 8 10  
12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100  
102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144:4 2 12 6 12 6 12 4 4 2 12 8 4 2 4 8 2 8 2 4 4 8 2  
2 2,9 9 9 9 9 9 9>

**SI.4.28.** [3, 9] on \*2323.

#### Diamond - Information

RCSR-ID	<b>uty</b>
Space group	$Fd\bar{3}m$
Unit cell lattice	(2.8287, 2.8287, 2.8287)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.0, 0.24996)
Coordinates, edge 1	(0.0, 0.0, 0.24996) $\leftrightarrow$ (0.25004, -0.24996, 0.25004)
Coordinates, edge 2	(0.0, 0.0, 0.24996) $\leftrightarrow$ (0.0, 0.24996, 0.0)
Shortest edge length	0.99981
Average edge length	1.00000
Longest edge length	1.00010
Shortest non-bonded distance	1.00038
Smallest angle between edges, degrees	59.98107
Average angle between edges, degrees	95.00122
Largest angle between edges, degrees	179.97682

#### Diamond - Systre-key

#### Gyroid1 - Information

RCSR-ID	<b>utz</b>
Space group	$I4_132$
Unit cell lattice	(2.24715, 2.24715, 2.24715)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.26701, 0.26701, 0.26701)
Coordinates, edge 1	(0.26701, 0.26701, 0.26701) $\leftrightarrow$ (0.01701, 0.51701, -0.01701)
Coordinates, edge 2	(0.26701, 0.26701, 0.26701) $\leftrightarrow$ (0.01701, 0.48299, 0.51701)
Coordinates, edge 3	(0.26701, 0.26701, 0.26701) $\leftrightarrow$ (0.23299, 0.26701, 0.73299)
Shortest edge length	0.93099
Average edge length	1.00000
Longest edge length	1.04990
Shortest non-bonded distance	0.84061
Smallest angle between edges, degrees	49.77635
Average angle between edges, degrees	97.77616
Largest angle between edges, degrees	172.64259

#### Gyroid1 - Systre-key

#### Gyroid2 - Information

RCSR-ID	<b>utz</b>
Space group	$I4_132$
Unit cell lattice	(2.24715, 2.24715, 2.24715)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.01701, 0.01701, 0.01701)
Coordinates, edge 1	(0.01701, 0.01701, 0.01701) $\leftrightarrow$ (0.23299, -0.23299, 0.26701)
Coordinates, edge 2	(0.01701, 0.01701, 0.01701) $\leftrightarrow$ (0.26701, -0.23299, -0.26701)
Coordinates, edge 3	(0.01701, 0.01701, 0.01701) $\leftrightarrow$ (0.01701, -0.01701, 0.48299)
Shortest edge length	0.93099
Average edge length	1.00000
Longest edge length	1.04990
Shortest non-bonded distance	0.84061
Smallest angle between edges, degrees	49.77635
Average angle between edges, degrees	97.77616
Largest angle between edges, degrees	172.64259

#### Gyroid2 - Systre-key

#### Primitive - Information

RCSR-ID	<b>utx</b>
Space group	<i>I</i> 432
Unit cell lattice	(1.75736, 1.75736, 1.75736)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25, 0.25, 0.25)
Coordinates, edge 1	(0.25, 0.25, 0.25) ↔ (0.25, 0.25, -0.25)
Coordinates, edge 2	(0.25, 0.25, 0.25) ↔ (0.25, 0.75, -0.25)
Shortest edge length	0.87868
Average edge length	1.00000
Longest edge length	1.24264
Shortest non-bonded distance	1.24264
Smallest angle between edges, degrees	45.00000
Average angle between edges, degrees	100.00000
Largest angle between edges, degrees	180.00000

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 2 1 0 0 1 3 0 0 0 1 3 1 -1 1 1 3 1 0 0 1 4 0 0 0 1 4 0 0 1 1 4 0 1 0 2 3 -1 0 0 2 3 0 -1 0 2 3 0 0 0 2  
4 -1 1 -1 2 4 0 0 -1 2 4 0 0 0 3 4 -1 1 0 3 4 -1 2 -1 3 4 0 1 -1

**Delauney-Dress-symbol** <1.1:144:0 0 48 47 0 0 0 126 125 28 27 66 65 78 77 104 103 0 0 0 138 137 0 0 94 93 124 123 50 49 58 57 0 0  
0 0 114 113 0 0 68 67 136 135 90 89 0 0 0 0 0 106 105 144 143 88 87 0 0 0 0 0 142 141 120 119 108 107 0 0 0 0 0 132 131 118 117 0 0 0  
0 0 0 140 139 0 0 0 0 0 0,18 3 5 7 9 11 13 15 17 36 21 23 25 27 29 31 33 35 54 39 41 43 45 47 49 51 53 72 57 59 61 63 65 67 69 71 90 75 77  
79 81 83 85 87 89 108 93 95 97 99 101 103 105 107 126 111 113 115 117 119 121 123 125 144 129 131 133 135 137 139 141 143,2 4 6 8 10  
12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100  
102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144:6 8 10 2 4 12 12 4 2 14 10 2 4 4 6 6 8 2 2 3 10  
2 4 2 2,9 9 9 9 9 9 9>

**SI.4.29.** [3, 9] on 2223<sub>01</sub>.

#### Diamond - Information

RCSR-ID	<b>uty</b>
Space group	<i>Fd</i> $\bar{3}m$
Unit cell lattice	(2.8287, 2.8287, 2.8287)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.0, 0.24996)
Coordinates, edge 1	(0.0, 0.0, 0.24996) $\leftrightarrow$ (0.0, 0.24996, 0.0)
Coordinates, edge 2	(0.0, 0.0, 0.24996) $\leftrightarrow$ (0.25004, -0.24996, 0.25004)
Shortest edge length	0.99981
Average edge length	1.00000
Longest edge length	1.00010
Shortest non-bonded distance	1.00038
Smallest angle between edges, degrees	59.98107
Average angle between edges, degrees	95.00122
Largest angle between edges, degrees	179.97682

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 1 1 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 4 -1 0 0 2 5 0 0 0 2 5  
0 0 1 2 7 -1 -1 0 2 7 0 0 1 2 8 0 0 0 3 4 -1 0 0 3 6 0 0 0 3 6 0 0 1 3 7 -1 0 0 3 7 0 0 1 3 8 0 0 0 4 5 0 0 0 4 5 1 0 1 4 6 0 -1 0 4 6 1 0 1 4 8 1 0 0 5 6  
0 0 0 5 7 0 0 0 5 8 0 0 0 5 8 1 0 0 6 7 0 0 0 6 8 0 0 0 6 8 1 1 0 7 8 1 0 0 7 8 1 1 0

#### Gyroid1 - Information

RCSR-ID	<b>utz</b>
Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.24715, 2.24715, 2.24715)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.26701, 0.26701, 0.26701)
Coordinates, edge 1	(0.26701, 0.26701, 0.26701) $\leftrightarrow$ (0.23299, 0.26701, 0.73299)
Coordinates, edge 2	(0.26701, 0.26701, 0.26701) $\leftrightarrow$ (0.01701, 0.48299, 0.51701)
Coordinates, edge 3	(0.26701, 0.26701, 0.26701) $\leftrightarrow$ (0.01701, 0.51701, -0.01701)
Shortest edge length	0.93099
Average edge length	1.00000
Longest edge length	1.04990
Shortest non-bonded distance	0.84061
Smallest angle between edges, degrees	49.77635
Average angle between edges, degrees	97.77616
Largest angle between edges, degrees	172.64259

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 1 0 0 2 4 0 0 -1 2 5 -1 -1 1 2  
5 0 0 0 2 6 0 -1 -1 2 6 0 0 -1 2 8 0 0 0 3 4 0 1 0 3 6 -1 -1 -1 3 6 0 0 0 3 7 -1 0 -1 3 7 -1 0 0 3 8 -1 0 1 4 5 -1 -1 0 4 5 0 -1 0 4 7 -1 -1 -1 4 7 0 0 0 4  
8 0 -1 1 5 6 1 0 0 5 7 0 0 -1 5 8 0 0 0 5 8 0 0 1 6 7 0 1 0 6 8 -1 0 1 6 8 0 0 1 7 8 0 -1 1 7 8 0 0 1

#### Gyroid2 - Information

RCSR-ID	<b>utz</b>
Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.24715, 2.24715, 2.24715)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.01701, 0.01701, 0.01701)
Coordinates, edge 1	(0.01701, 0.01701, 0.01701) $\leftrightarrow$ (0.01701, -0.01701, 0.48299)
Coordinates, edge 2	(0.01701, 0.01701, 0.01701) $\leftrightarrow$ (0.26701, -0.23299, -0.26701)
Coordinates, edge 3	(0.01701, 0.01701, 0.01701) $\leftrightarrow$ (0.23299, -0.23299, 0.26701)
Shortest edge length	0.93099
Average edge length	1.00000
Longest edge length	1.04990
Shortest non-bonded distance	0.84061
Smallest angle between edges, degrees	49.77635
Average angle between edges, degrees	97.77616
Largest angle between edges, degrees	172.64259

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 1 0 0 2 4 0 0 -1 2 5 -1 -1 1 2  
5 0 0 0 2 6 0 -1 -1 2 6 0 0 -1 2 8 0 0 0 3 4 0 1 0 3 6 -1 -1 -1 3 6 0 0 0 3 7 -1 0 -1 3 7 -1 0 0 3 8 -1 0 1 4 5 -1 -1 0 4 5 0 -1 0 4 7 -1 -1 -1 4 7 0 0 0 4  
8 0 -1 1 5 6 1 0 0 5 7 0 0 -1 5 8 0 0 0 5 8 0 0 1 6 7 0 1 0 6 8 -1 0 1 6 8 0 0 1 7 8 0 -1 1 7 8 0 0 1

#### Primitive - Information

RCSR-ID	<b>utx</b>
Space group	<i>I</i> 432
Unit cell lattice	(1.75736, 1.75736, 1.75736)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25, 0.25, 0.25)
Coordinates, edge 1	(0.25, 0.25, 0.25) ↔ (0.25, 0.75, -0.25)
Coordinates, edge 2	(0.25, 0.25, 0.25) ↔ (0.25, 0.25, -0.25)
Shortest edge length	0.87868
Average edge length	1.00000
Longest edge length	1.24264
Shortest non-bonded distance	1.24264
Smallest angle between edges, degrees	45.00000
Average angle between edges, degrees	100.00000
Largest angle between edges, degrees	180.00000

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 2 1 0 0 1 3 0 0 0 1 3 1 -1 1 1 3 1 0 0 1 4 0 0 0 1 4 0 0 1 1 4 0 1 0 2 3 -1 0 0 2 3 0 -1 0 2 3 0 0 0 2  
4 -1 1 -1 2 4 0 0 -1 2 4 0 0 0 3 4 -1 1 0 3 4 -1 2 -1 3 4 0 1 -1

**Delauney-Dress-symbol** <1.1:144:0 0 64 63 0 0 0 0 144 143 46 45 84 83 94 93 124 123 0 0 0 0 120 119 0 0 68 67 42 41 140 139 108 107  
88 87 0 0 0 0 0 0 114 113 142 141 66 65 76 75 0 0 132 131 0 0 0 0 106 105 86 85 0 0 0 0 0 0 126 125 104 103 0 0 0 0 0 0 138 137 118 117 0 0  
0 0 0 0 136 135 0 0 0 0 0,18 3 5 7 9 11 13 15 17 36 21 23 25 27 29 31 33 35 54 39 41 43 45 47 49 51 53 72 57 59 61 63 65 67 69 71 90 75 77  
79 81 83 85 87 89 108 93 95 97 99 101 103 105 107 126 111 113 115 117 119 121 123 125 144 129 131 133 135 137 139 141 143,2 4 6 8 10  
12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100  
102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144:6 8 4 2 4 12 8 12 18 2 12 14 8 4 2 4 4 2 6 2 4 2  
2 2,9 9 9 9 9 9 9>

**SI.4.30.** [3, 9] on 2223<sub>11</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.48852, 2.48852, 2.48852)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.12467, 0.12467, 0.37533)
Coordinates, edge 1	(0.12467, 0.12467, 0.37533) ↔ (0.12467, -0.12467, 0.62467)
Coordinates, edge 2	(0.12467, 0.12467, 0.37533) ↔ (0.37467, -0.12533, 0.37467)
Coordinates, edge 3	(0.12467, 0.12467, 0.37533) ↔ (0.12533, -0.37467, 0.37467)
Shortest edge length	0.87753
Average edge length	1.00000
Longest edge length	1.24264
Shortest non-bonded distance	0.87983
Smallest angle between edges, degrees	44.92525
Average angle between edges, degrees	82.55681
Largest angle between edges, degrees	135.07436

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 2 1 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 -1 0 0 2 4 0 0 0 2 5 -1 0 0 2 6 0 0 0 2 7 0 -1 0 2 8 0 -1 0 3 4 1 0 0 3 5 0 0 1 3 6 1 -1 0 3 7 0 0 0 3 7 0 0 1 3 7 1 -1 0 3 8 1 -1 0 4 5 -1 0 0 4 5 -1 0 1 4 5 0 0 0 4 6 -1 0 1 4 7 -1 0 0 4 8 0 -1 0 5 6 0 0 0 5 7 0 0 0 5 8 0 -1 0 6 7 0 0 0 6 8 0 -1 0 6 8 0 0 0 6 8 1 -1 -1 7 8 1 -1 -1

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.70764, 1.70764, 1.70764)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25384, 0.25384, 0.25384)
Coordinates, edge 1	(0.25384, 0.25384, 0.25384) ↔ (0.24616, 0.25384, 0.74616)
Coordinates, edge 2	(0.25384, 0.25384, 0.25384) ↔ (0.00384, 0.50384, -0.00384)
Coordinates, edge 3	(0.25384, 0.25384, 0.25384) ↔ (0.99616, -0.00384, -0.00384)
Shortest edge length	0.74708
Average edge length	1.00000
Longest edge length	1.41212
Shortest non-bonded distance	0.71670
Smallest angle between edges, degrees	25.52249
Average angle between edges, degrees	94.72751
Largest angle between edges, degrees	125.47056

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 2 0 2 3 1 2 2 1 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 -2 -1 0 2 5 0 -2 -3 2 6 0 0 0 2 7 -2 -1 0 2 8 0 -2 -3 3 4 -1 0 1 3 5 -1 -1 -1 3 6 1 0 0 3 7 -2 -1 0 3 7 0 0 0 3 7 0 0 1 3 8 1 -1 -2 4 5 1 -1 -2 4 6 1 1 1 4 7 1 0 0 4 8 0 0 0 4 8 2 -1 -3 4 8 2 -1 -2 5 6 0 0 0 5 6 0 2 3 5 6 2 1 1 5 7 -1 0 1 5 8 1 0 0 6 7 -1 0 1 6 8 -1 -1 -1 7 8 1 -1 -2

#### Gyroid2 - Information

Not available due to vertex collisions.

**Gyroid2 - Systre-key** Not available due to vertex collisions.

#### Primitive - Information

Space group	<i>P</i> 432
Unit cell lattice	(1.29346, 1.29346, 1.29346)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.18632, 0.18632, 0.18632)
Coordinates, edge 1	(0.18632, 0.18632, 0.18632) ↔ (0.18632, 0.81368, -0.18632)
Coordinates, edge 2	(0.18632, 0.18632, 0.18632) ↔ (0.18632, 0.18632, 0.81368)
Coordinates, edge 3	(0.18632, 0.18632, 0.18632) ↔ (0.81368, 0.81368, -0.18632)
Shortest edge length	0.81147
Average edge length	1.00000
Longest edge length	1.24470
Shortest non-bonded distance	0.48198
Smallest angle between edges, degrees	30.70849
Average angle between edges, degrees	83.56068
Largest angle between edges, degrees	131.74793

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 2 1 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 5 0 -1 0 2 6 -1 0 0 2 7 -1 0 0 2 8 0 -1 0 3 4 -1 -1 -1 3 5 -1 -2 -2 3 5 0 -1 0 3 5 0 0 0 3 6 -1 -1 -1 3 7 0 0 1 3 8 0 -2 -1 4 5 0 -1 -1 4 6 1 0 1 4 7 -1 0 0 4 7 0 0 0 4 7 1 1 2 4 8 1 0 1 5 6 -1 -1 -1 5 7 0 1 1 5 8 1 0 1 6 7 0 1 1 6 8 0 0 0 6 8 1 -1 0 6 8 2 1 2 7 8 2 0 1

**Delauney-Dress-symbol** <1.1:144:26 25 0 0 48 47 104 103 0 0 126 125 56 55 142 141 78 77 122 121 0 0 138 137 0 0 96 95 38 37 88 87 60  
59 0 0 114 113 68 67 0 0 134 133 106 105 90 89 0 0 86 85 0 0 108 107 124 123 144 143 98 97 0 0 140 139 0 0 120 119 116 115 0 0 0 0 132  
131 128 127 0 0 0 0 0 0,18 3 5 7 9 11 13 15 17 36 21 23 25 27 29 31 33 35 54 39 41 43 45 47 49 51 53 72 57 59 61 63 65 67 69 71 90 75  
77 79 81 83 85 87 89 108 93 95 97 99 101 103 105 107 126 111 113 115 117 119 121 123 125 144 129 131 133 135 137 139 141 143,2 4 6 8  
10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98  
100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144:6 6 6 12 6 6 12 3 3 12 6 6 6 3 3 6 12 6  
6,9 9 9 9 9 9 9>

**SI.4.31.** [3, 9] on 2223<sub>21</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.74891, 1.74891, 1.74891)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.14479, 0.14479, 0.35521)
Coordinates, edge 1	(0.14479, 0.14479, 0.35521) ↔ (0.10521, -0.39479, 0.39479)
Coordinates, edge 2	(0.14479, 0.14479, 0.35521) ↔ (0.39479, -0.10521, 0.39479)
Coordinates, edge 3	(0.14479, 0.14479, 0.35521) ↔ (0.35521, -0.64479, 0.35521)
Shortest edge length	0.62219
Average edge length	1.00000
Longest edge length	1.42909
Shortest non-bonded distance	0.52046
Smallest angle between edges, degrees	19.55312
Average angle between edges, degrees	86.25078
Largest angle between edges, degrees	135.04501

**Diamond - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 0 1 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 -4 -1 2 5 0 0 1 2  
 6 -1 2 1 2 6 0 -1 0 2 6 0 0 0 2 7 -1 -1 0 2 8 -1 1 1 3 4 -1 0 0 3 5 0 -1 0 3 6 0 -1 0 3 7 0 0 0 3 8 -1 0 0 4 5 4 -4 -1 4 6 0 3 1 4 7 -1 3 1 4 7 0 0 0 4 7 1  
 0 0 4 8 2 -1 0 5 6 -1 2 0 5 7 -3 4 1 5 8 -2 3 1 5 8 -1 1 0 5 8 0 0 0 6 7 0 -3 -1 6 8 -1 1 1 7 8 3 -4 -1

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.25122, 1.25122, 1.25122)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.3015, 0.3015, 0.3015)
Coordinates, edge 1	(0.3015, 0.3015, 0.3015) ↔ (0.9485, -0.0515, -0.0515)
Coordinates, edge 2	(0.3015, 0.3015, 0.3015) ↔ (0.0515, 0.5515, -0.0515)
Coordinates, edge 3	(0.3015, 0.3015, 0.3015) ↔ (0.3015, -0.3015, 1.1985)
Shortest edge length	0.62511
Average edge length	1.00000
Longest edge length	1.35238
Shortest non-bonded distance	0.31859
Smallest angle between edges, degrees	23.43409
Average angle between edges, degrees	95.86726
Largest angle between edges, degrees	149.94423

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 3 0 0 0 1 3 0 1 0 1 3 1 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 -1 2 4 2 4 0 -1 0 2 4  
 0 0 0 2 5 0 -3 -3 2 6 0 0 3 2 7 -1 0 1 2 8 -1 1 3 4 0 -1 0 3 5 -1 0 0 3 6 0 -1 0 3 7 0 0 0 3 8 -1 0 0 4 5 0 -2 -3 4 6 1 -2 -1 4 7 0 -2 -3 4 8 -1 1 3 5 6  
 3 -3 -3 5 7 -1 3 4 5 7 0 0 0 5 7 1 0 0 5 8 1 0 1 6 7 -2 3 3 6 8 -2 3 4 6 8 -1 1 0 6 8 0 0 0 7 8 2 -3 -3

#### Gyroid2 - Information

Not available due to vertex collisions.

**Gyroid2 - Systre-key** Not available due to vertex collisions.

#### Primitive - Information

Space group	<i>P</i> 432
Unit cell lattice	(1.29345, 1.29345, 1.29345)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.18631, 0.18631, 0.18631)
Coordinates, edge 1	(0.18631, 0.18631, 0.18631) ↔ (0.81369, 0.81369, -0.18631)
Coordinates, edge 2	(0.18631, 0.18631, 0.18631) ↔ (0.18631, 0.18631, 0.81369)
Coordinates, edge 3	(0.18631, 0.18631, 0.18631) ↔ (0.18631, -0.18631, 0.81369)
Shortest edge length	0.81148
Average edge length	1.00000
Longest edge length	1.24470
Shortest non-bonded distance	0.48197
Smallest angle between edges, degrees	30.70808
Average angle between edges, degrees	83.56044
Largest angle between edges, degrees	131.74744

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 2 1 0 0 1 3 0 0 0 1 4 0 0 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 1 8 0 0 0 2 3 0 0 0 2 4 0 0 0 2 5 0 -1 0 2 6  
 -1 0 0 2 7 -1 0 0 2 8 0 -1 0 3 4 -1 -1 -1 3 5 -1 -2 -2 3 5 0 -1 0 3 5 0 0 0 3 6 -1 -1 3 7 0 0 1 3 8 0 -2 -1 4 5 0 -1 -1 4 6 1 0 1 4 7 -1 0 0 4 7 0 0 0 4  
 7 1 1 2 4 8 1 0 1 5 6 -1 -1 -1 5 7 0 1 1 5 8 1 0 1 6 7 0 1 1 6 8 0 0 0 6 8 1 -1 0 6 8 2 1 2 7 8 2 0 1

**Delauney-Dress-symbol** <1.1:144:26 25 82 81 0 0 104 103 52 51 0 0 56 55 112 111 144 143 122 121 64 63 0 0 142 141 0 0 38 37 100 99  
90 89 76 75 0 0 68 67 118 117 0 0 134 133 108 107 130 129 0 0 86 85 0 0 94 93 126 125 98 97 0 0 140 139 0 0 124 123 116 115 0 0 0 0 136  
135 128 127 0 0 0 0 0 0,18 3 5 7 9 11 13 15 17 36 21 23 25 27 29 31 33 35 54 39 41 43 45 47 49 51 53 72 57 59 61 63 65 67 69 71 90 75  
77 79 81 83 85 87 89 108 93 95 97 99 101 103 105 107 126 111 113 115 117 119 121 123 125 144 129 131 133 135 137 139 141 143,2 4 6 8  
10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98  
100 102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144:3 6 6 6 12 6 6 12 3 3 6 6 12 3 6 6  
12,9 9 9 9 9 9 9>

**SI.4.32.** [3, 9] on 2223<sub>31</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.53132, 1.53132, 1.53132)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.05249, 0.05249, 0.05249)
Coordinates, edge 1	(0.05249, 0.05249, 0.05249) ↔ (0.30249, -0.30249, -0.19751)
Coordinates, edge 2	(0.05249, 0.05249, 0.05249) ↔ (0.30249, -0.19751, 0.69751)
Coordinates, edge 3	(0.05249, 0.05249, 0.05249) ↔ (0.05249, -0.55249, 0.44751)
Shortest edge length	0.76721
Average edge length	1.00000
Longest edge length	1.12638
Shortest non-bonded distance	0.22735
Smallest angle between edges, degrees	40.18119
Average angle between edges, degrees	98.74696
Largest angle between edges, degrees	163.84379

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 4 0 0 0 1 4 7 3 -9 1 5 0 0 0 1 5 0 1 0 1 6 0 0 0 1 7 0 0 0 2 3 -5 -3 6 2 3 0 0 0 2 4 7 3 -9  
2 5 0 0 -1 2 6 0 0 -1 2 6 4 1 -6 2 8 0 0 0 3 5 0 1 0 3 5 5 3 -7 3 6 9 4 -12 3 7 -1 0 0 3 8 0 0 0 3 8 3 1 -3 4 5 0 1 0 4 6 -3 -2 3 4 6 0 0 0 4 7 -7 -3 9 4  
7 -6 -2 7 4 8 -6 -3 9 5 7 -6 -3 7 5 7 0 0 0 5 8 3 0 -3 6 7 -3 0 4 6 8 -6 -3 9 6 8 0 0 1 7 8 1 0 0 7 8 3 0 -3

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.0987, 1.0987, 1.0987)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.34851, 0.34851, 0.34851)
Coordinates, edge 1	(0.34851, 0.34851, 0.34851) ↔ (0.09851, 0.59851, 0.90149)
Coordinates, edge 2	(0.34851, 0.34851, 0.34851) ↔ (0.09851, -0.59851, 0.59851)
Coordinates, edge 3	(0.34851, 0.34851, 0.34851) ↔ (0.34851, -0.34851, 1.15149)
Shortest edge length	0.72112
Average edge length	1.00000
Longest edge length	1.16825
Shortest non-bonded distance	0.10082
Smallest angle between edges, degrees	36.78510
Average angle between edges, degrees	99.21751
Largest angle between edges, degrees	167.87891

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 4 0 0 0 1 4 9 20 32 1 5 0 0 0 1 5 0 1 0 1 6 0 0 0 1 7 0 0 0 2 3 -5 -12 -18 2 3 0 0 0 2 4 9  
20 32 2 5 0 0 -1 2 7 0 0 -1 2 7 7 15 24 2 8 0 0 0 3 5 0 1 0 3 5 5 12 17 3 6 -3 -6 -12 3 7 12 27 42 3 8 0 0 0 3 8 6 13 22 4 5 0 1 0 4 6 -9 -20 -32 4 6  
-8 -17 -29 4 7 -2 -5 -8 4 7 0 0 0 4 8 -6 -14 -20 5 6 -8 -18 -29 5 6 0 0 0 5 8 6 12 22 6 7 6 12 21 6 8 3 6 12 6 8 6 12 22 7 8 -6 -14 -20 7 8 0 0 1

#### Gyroid2 - Information

RCSR-ID	<b>utz</b>
Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.24715, 2.24715, 2.24715)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.01701, 0.01701, 0.01701)
Coordinates, edge 1	(0.01701, 0.01701, 0.01701) ↔ (0.23299, -0.23299, 0.26701)
Coordinates, edge 2	(0.01701, 0.01701, 0.01701) ↔ (0.26701, -0.23299, -0.26701)
Coordinates, edge 3	(0.01701, 0.01701, 0.01701) ↔ (0.01701, -0.01701, 0.48299)
Shortest edge length	0.93099
Average edge length	1.00000
Longest edge length	1.04990
Shortest non-bonded distance	0.84061
Smallest angle between edges, degrees	49.77635
Average angle between edges, degrees	97.77616
Largest angle between edges, degrees	172.64259

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 1 0 0 2 4 0 0 -1 2 5 -1 -1 1 2  
5 0 0 0 2 6 0 -1 -1 2 6 0 0 -1 2 8 0 0 0 3 4 0 1 0 3 6 -1 -1 -1 3 6 0 0 0 3 7 -1 0 -1 3 7 -1 0 0 3 8 -1 0 1 4 5 -1 -1 0 4 5 0 -1 0 4 7 -1 -1 -1 4 7 0 0 0 4  
8 0 -1 1 5 6 1 0 0 5 7 0 0 -1 5 8 0 0 0 5 8 0 0 1 6 7 0 1 0 6 8 -1 0 1 6 8 0 0 1 7 8 0 -1 1 7 8 0 0 1

#### Primitive - Information

RCSR-ID	<b>utx</b>
Space group	<i>I</i> 432
Unit cell lattice	(1.75736, 1.75736, 1.75736)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25, 0.25, 0.25)
Coordinates, edge 1	(0.25, 0.25, 0.25) ↔ (0.25, -0.25, 0.75)
Coordinates, edge 2	(0.25, 0.25, 0.25) ↔ (0.25, 0.25, -0.25)
Shortest edge length	0.87868
Average edge length	1.00000
Longest edge length	1.24264
Shortest non-bonded distance	1.24264
Smallest angle between edges, degrees	45.00000
Average angle between edges, degrees	100.00000
Largest angle between edges, degrees	180.00000

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 2 1 0 0 1 3 0 0 0 1 3 1 -1 1 1 3 1 0 0 1 4 0 0 0 1 4 0 0 1 1 4 0 1 0 2 3 -1 0 0 2 3 0 -1 0 2 3 0 0 0 2  
4 -1 1 -1 2 4 0 0 -1 2 4 0 0 0 3 4 -1 1 0 3 4 -1 2 -1 3 4 0 1 -1

**Delauney-Dress-symbol** <1.1:144:0 0 0 0 84 83 0 0 34 33 54 53 64 63 104 103 114 113 0 0 0 66 65 0 0 122 121 144 143 46 45 102 101 0  
0 0 0 78 77 0 0 120 119 142 141 68 67 0 0 0 0 132 131 0 0 86 85 96 95 0 0 0 0 0 106 105 140 139 126 125 0 0 0 0 0 124 123 138 137 0 0 0  
0 0 0 136 135 0 0 0 0 0 0,18 3 5 7 9 11 13 15 17 36 21 23 25 27 29 31 33 35 54 39 41 43 45 47 49 51 53 72 57 59 61 63 65 67 69 71 90 75 77  
79 81 83 85 87 89 108 93 95 97 99 101 103 105 107 126 111 113 115 117 119 121 123 125 144 129 131 133 135 137 139 141 143,2 4 6 8 10  
12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100  
102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144:4 2 8 10 10 8 12 8 2 18 2 4 4 4 4 2 4 4 6 2 10 6  
2 2 2,9 9 9 9 9 9 9>

**SI.4.33.** [3, 9] on 2223<sub>41</sub>.

#### Diamond - Information

Space group	<i>F</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.53132, 1.53132, 1.53132)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0525, 0.0525, 0.0525)
Coordinates, edge 1	(0.0525, 0.0525, 0.0525) ↔ (0.3025, 0.6975, -0.1975)
Coordinates, edge 2	(0.0525, 0.0525, 0.0525) ↔ (0.0525, 0.4475, -0.5525)
Coordinates, edge 3	(0.0525, 0.0525, 0.0525) ↔ (0.3025, -0.1975, -0.3025)
Shortest edge length	0.76724
Average edge length	1.00000
Longest edge length	1.12634
Shortest non-bonded distance	0.22741
Smallest angle between edges, degrees	40.18350
Average angle between edges, degrees	98.74718
Largest angle between edges, degrees	163.84728

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 4 0 0 0 1 4 7 3 -9 1 5 0 0 0 1 5 0 1 0 1 6 0 0 0 1 7 0 0 0 2 3 -5 -3 6 2 3 0 0 0 2 4 7 3 -9  
2 5 0 0 -1 2 6 0 0 -1 2 6 4 1 -6 2 8 0 0 0 3 5 0 1 0 3 5 5 3 -7 3 6 9 4 -12 3 7 -1 0 0 3 8 0 0 0 3 8 3 1 -3 4 5 0 1 0 4 6 -3 -2 3 4 6 0 0 0 4 7 -7 -3 9 4  
7 -6 -2 7 4 8 -6 -3 9 5 7 -6 -3 7 5 7 0 0 0 5 8 3 0 -3 6 7 -3 0 4 6 8 -6 -3 9 6 8 0 0 1 7 8 1 0 0 7 8 3 0 -3

#### Gyroid1 - Information

Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(1.0987, 1.0987, 1.0987)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.09851, 0.09851, 0.09851)
Coordinates, edge 1	(0.09851, 0.09851, 0.09851) ↔ (0.34851, -0.84851, -0.15149)
Coordinates, edge 2	(0.09851, 0.09851, 0.09851) ↔ (0.09851, 0.90149, -0.59851)
Coordinates, edge 3	(0.09851, 0.09851, 0.09851) ↔ (0.34851, -0.15149, 0.65149)
Shortest edge length	0.72112
Average edge length	1.00000
Longest edge length	1.16825
Shortest non-bonded distance	0.10082
Smallest angle between edges, degrees	36.78510
Average angle between edges, degrees	99.21751
Largest angle between edges, degrees	167.87891

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 4 0 0 0 1 4 9 20 32 1 5 0 0 0 1 5 0 1 0 1 6 0 0 0 1 7 0 0 0 2 3 -5 -12 -18 2 3 0 0 0 2 4 9  
20 32 2 5 0 0 -1 2 7 0 0 -1 2 7 7 15 24 2 8 0 0 0 3 5 0 1 0 3 5 5 12 17 3 6 -3 -6 -12 3 7 12 27 42 3 8 0 0 0 3 8 6 13 22 4 5 0 1 0 4 6 -9 -20 -32 4 6  
-8 -17 -29 4 7 -2 -5 -8 4 7 0 0 0 4 8 -6 -14 -20 5 6 -8 -18 -29 5 6 0 0 0 5 8 6 12 22 6 7 6 12 21 6 8 3 6 12 6 8 6 12 22 7 8 -6 -14 -20 7 8 0 0 1

#### Gyroid2 - Information

RCSR-ID	<b>utz</b>
Space group	<i>I</i> 4 <sub>1</sub> 32
Unit cell lattice	(2.24715, 2.24715, 2.24715)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.26701, 0.26701, 0.26701)
Coordinates, edge 1	(0.26701, 0.26701, 0.26701) ↔ (0.01701, 0.51701, -0.01701)
Coordinates, edge 2	(0.26701, 0.26701, 0.26701) ↔ (0.23299, 0.26701, 0.73299)
Coordinates, edge 3	(0.26701, 0.26701, 0.26701) ↔ (0.01701, 0.48299, 0.51701)
Shortest edge length	0.93099
Average edge length	1.00000
Longest edge length	1.04990
Shortest non-bonded distance	0.84061
Smallest angle between edges, degrees	49.77635
Average angle between edges, degrees	97.77616
Largest angle between edges, degrees	172.64259

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 1 0 0 2 4 0 0 -1 2 5 -1 -1 1 2  
5 0 0 0 2 6 0 -1 -1 2 6 0 0 -1 2 8 0 0 0 3 4 0 1 0 3 6 -1 -1 -1 3 6 0 0 0 3 7 -1 0 -1 3 7 -1 0 0 3 8 -1 0 1 4 5 -1 -1 0 4 5 0 -1 0 4 7 -1 -1 -1 4 7 0 0 0 4  
8 0 -1 1 5 6 1 0 0 5 7 0 0 -1 5 8 0 0 0 5 8 0 0 1 6 7 0 1 0 6 8 -1 0 1 6 8 0 0 1 7 8 0 -1 1 7 8 0 0 1

#### Primitive - Information

RCSR-ID	<b>utx</b>
Space group	<i>I</i> 432
Unit cell lattice	(1.75736, 1.75736, 1.75736)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25, 0.25, 0.25)
Coordinates, edge 1	(0.25, 0.25, 0.25) ↔ (0.25, 0.75, -0.25)
Coordinates, edge 2	(0.25, 0.25, 0.25) ↔ (0.25, 0.25, -0.25)
Shortest edge length	0.87868
Average edge length	1.00000
Longest edge length	1.24264
Shortest non-bonded distance	1.24264
Smallest angle between edges, degrees	45.00000
Average angle between edges, degrees	100.00000
Largest angle between edges, degrees	180.00000

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 2 1 0 0 1 3 0 0 0 1 3 1 -1 1 1 3 1 0 0 1 4 0 0 0 1 4 0 0 1 1 4 0 1 0 2 3 -1 0 0 2 3 0 -1 0 2 3 0 0 0 2  
4 -1 1 -1 2 4 0 0 -1 2 4 0 0 0 3 4 -1 1 0 3 4 -1 2 -1 3 4 0 1 -1

**Delauney-Dress-symbol** <1.1:144:0 0 46 45 0 0 0 124 123 36 35 66 65 76 75 104 103 0 0 136 135 0 0 0 94 93 122 121 48 47 58 57 0 0  
112 111 0 0 0 144 143 88 87 68 67 0 0 0 0 0 106 105 142 141 86 85 0 0 0 0 0 118 117 108 107 140 139 0 0 0 0 0 130 129 126 125 0 0 0  
0 0 0 138 137 0 0 0 0 0 0,18 3 5 7 9 11 13 15 17 36 21 23 25 27 29 31 33 35 54 39 41 43 45 47 49 51 53 72 57 59 61 63 65 67 69 71 90 75 77  
79 81 83 85 87 89 108 93 95 97 99 101 103 105 107 126 111 113 115 117 119 121 123 125 144 129 131 133 135 137 139 141 143,2 4 6 8 10  
12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100  
102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144:8 8 4 2 10 10 12 12 4 2 4 4 4 2 8 8 2 8 2 6 2 4 6  
2 2,9 9 9 9 9 9 9>

**SI.4.34.** [3, 9] on 23×.

#### Diamond - Information

RCSR-ID	<b>uty</b>
Space group	$Fd\bar{3}m$
Unit cell lattice	(2.8287, 2.8287, 2.8287)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.0, 0.24996)
Coordinates, edge 1	(0.0, 0.0, 0.24996) ↔ (0.0, 0.24996, 0.0)
Coordinates, edge 2	(0.0, 0.0, 0.24996) ↔ (0.25004, -0.24996, 0.25004)
Shortest edge length	0.99981
Average edge length	1.00000
Longest edge length	1.00010
Shortest non-bonded distance	1.00038
Smallest angle between edges, degrees	59.98107
Average angle between edges, degrees	95.00122
Largest angle between edges, degrees	179.97682

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 1 1 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 0 0 0 2 4 -1 0 0 2 5 0 0 0 2 5  
0 0 1 2 7 -1 -1 0 2 7 0 0 1 2 8 0 0 0 3 4 -1 0 0 3 6 0 0 0 3 6 0 0 1 3 7 -1 0 0 3 7 0 0 1 3 8 0 0 0 4 5 0 0 0 4 5 1 0 1 4 6 0 -1 0 4 6 1 0 1 4 8 1 0 0 5 6  
0 0 0 5 7 0 0 0 5 8 0 0 0 5 8 1 0 0 6 7 0 0 0 6 8 0 0 0 6 8 1 1 0 7 8 1 0 0 7 8 1 1 0

#### Gyroid1 - Information

RCSR-ID	<b>utz</b>
Space group	$I4_132$
Unit cell lattice	(2.24715, 2.24715, 2.24715)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.26701, 0.26701, 0.26701)
Coordinates, edge 1	(0.26701, 0.26701, 0.26701) ↔ (0.01701, 0.51701, -0.01701)
Coordinates, edge 2	(0.26701, 0.26701, 0.26701) ↔ (0.01701, 0.48299, 0.51701)
Coordinates, edge 3	(0.26701, 0.26701, 0.26701) ↔ (0.23299, 0.26701, 0.73299)
Shortest edge length	0.93099
Average edge length	1.00000
Longest edge length	1.04990
Shortest non-bonded distance	0.84061
Smallest angle between edges, degrees	49.77635
Average angle between edges, degrees	97.77616
Largest angle between edges, degrees	172.64259

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 1 0 0 2 4 0 0 -1 2 5 -1 -1 1 2  
5 0 0 0 2 6 0 -1 -1 2 6 0 0 -1 2 8 0 0 0 3 4 0 1 0 3 6 -1 -1 -1 3 6 0 0 0 3 7 -1 0 -1 3 7 -1 0 0 3 8 -1 0 1 4 5 -1 -1 0 4 5 0 -1 0 4 7 -1 -1 -1 4 7 0 0 0 4  
8 0 -1 1 5 6 1 0 0 5 7 0 0 -1 5 8 0 0 0 5 8 0 0 1 6 7 0 1 0 6 8 -1 0 1 6 8 0 0 1 7 8 0 -1 1 7 8 0 0 1

#### Gyroid2 - Information

RCSR-ID	<b>utz</b>
Space group	$I4_132$
Unit cell lattice	(2.24715, 2.24715, 2.24715)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.01701, 0.01701, 0.01701)
Coordinates, edge 1	(0.01701, 0.01701, 0.01701) ↔ (0.23299, -0.23299, 0.26701)
Coordinates, edge 2	(0.01701, 0.01701, 0.01701) ↔ (0.26701, -0.23299, -0.26701)
Coordinates, edge 3	(0.01701, 0.01701, 0.01701) ↔ (0.01701, -0.01701, 0.48299)
Shortest edge length	0.93099
Average edge length	1.00000
Longest edge length	1.04990
Shortest non-bonded distance	0.84061
Smallest angle between edges, degrees	49.77635
Average angle between edges, degrees	97.77616
Largest angle between edges, degrees	172.64259

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 0 1 0 1 5 0 0 0 1 6 0 0 0 1 7 0 0 0 2 3 1 0 0 2 4 0 0 -1 2 5 -1 -1 1 2  
5 0 0 0 2 6 0 -1 -1 2 6 0 0 -1 2 8 0 0 0 3 4 0 1 0 3 6 -1 -1 -1 3 6 0 0 0 3 7 -1 0 -1 3 7 -1 0 0 3 8 -1 0 1 4 5 -1 -1 0 4 5 0 -1 0 4 7 -1 -1 -1 4 7 0 0 0 4  
8 0 -1 1 5 6 1 0 0 5 7 0 0 -1 5 8 0 0 0 5 8 0 0 1 6 7 0 1 0 6 8 -1 0 1 6 8 0 0 1 7 8 0 -1 1 7 8 0 0 1

#### Primitive - Information

RCSR-ID	<b>utx</b>
Space group	<i>I432</i>
Unit cell lattice	(1.75736, 1.75736, 1.75736)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25, 0.25, 0.25)
Coordinates, edge 1	(0.25, 0.25, 0.25) ↔ (0.25, 0.25, -0.25)
Coordinates, edge 2	(0.25, 0.25, 0.25) ↔ (0.25, 0.75, -0.25)
Shortest edge length	0.87868
Average edge length	1.00000
Longest edge length	1.24264
Shortest non-bonded distance	1.24264
Smallest angle between edges, degrees	45.00000
Average angle between edges, degrees	100.00000
Largest angle between edges, degrees	180.00000

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 2 1 0 0 1 3 0 0 0 1 3 1 -1 1 1 3 1 0 0 1 4 0 0 0 1 4 0 0 1 1 4 0 1 0 2 3 -1 0 0 2 3 0 -1 0 2 3 0 0 0 2  
4 -1 1 -1 2 4 0 0 -1 2 4 0 0 0 3 4 -1 1 0 3 4 -1 2 -1 3 4 0 1 -1

**Delauney-Dress-symbol** <1.1:144:0 0 48 47 0 0 0 126 125 36 35 66 65 78 77 104 103 0 0 136 135 0 0 0 94 93 124 123 50 49 58 57 0 0  
0 0 114 113 0 0 68 67 144 143 90 89 0 0 0 0 0 106 105 142 141 88 87 0 0 0 0 0 140 139 120 119 108 107 0 0 0 0 0 130 129 118 117 0 0 0  
0 0 0 138 137 0 0 0 0 0,18 3 5 7 9 11 13 15 17 36 21 23 25 27 29 31 33 35 54 39 41 43 45 47 49 51 53 72 57 59 61 63 65 67 69 71 90 75 77  
79 81 83 85 87 89 108 93 95 97 99 101 103 105 107 126 111 113 115 117 119 121 123 125 144 129 131 133 135 137 139 141 143,2 4 6 8 10  
12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78 80 82 84 86 88 90 92 94 96 98 100  
102 104 106 108 110 112 114 116 118 120 122 124 126 128 130 132 134 136 138 140 142 144:6 8 12 2 4 10 12 12 4 2 4 10 2 4 4 10 8 2 2 3 10  
2 4 2 2,9 9 9 9 9 9 9>

**SI.4.35.** [3, 10] on 3\*22.

#### Diamond - Information

Space group	$Pm\bar{3}$
Unit cell lattice	(1.30602, 1.30602, 1.30602)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.5, 0.5)
Coordinates, edge 1	(0.0, 0.5, 0.5) ↔ (0.0, 0.5, -0.5)
Coordinates, edge 2	(0.0, 0.5, 0.5) ↔ (0.5, 0.0, 0.5)
Shortest edge length	0.92350
Average edge length	1.00000
Longest edge length	1.30602
Shortest non-bonded distance	1.30602
Smallest angle between edges, degrees	45.00000
Average angle between edges, degrees	100.00000
Largest angle between edges, degrees	180.00000

**Diamond - Systre-key** 3 1 1 -1 0 0 1 2 -1 0 0 1 2 -1 1 0 1 2 0 0 0 1 2 0 1 0 1 3 0 0 0 1 3 0 0 1 1 3 0 1 0 1 3 0 1 1 2 2 0 0 -1 2 3 0 0 0 2 3 0 0 1  
2 3 1 0 0 2 3 1 0 1 3 3 0 -1 0

#### Gyroid1 - Information

Space group	$I2_13$
Unit cell lattice	(2.06742, 2.06742, 2.06742)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.8892)
Coordinates, edge 1	(0.0, 0.25, 0.8892) ↔ (0.25, 0.1108, 0.5)
Coordinates, edge 2	(0.0, 0.25, 0.8892) ↔ (0.5, 0.25, 1.1108)
Coordinates, edge 3	(0.0, 0.25, 0.8892) ↔ (0.25, -0.1108, 1.0)
Shortest edge length	0.93596
Average edge length	1.00000
Longest edge length	1.13069
Shortest non-bonded distance	1.18314
Smallest angle between edges, degrees	51.69690
Average angle between edges, degrees	97.58383
Largest angle between edges, degrees	151.66598

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 1 1 -1 1 5 0 0 0 1 5 0 0 1 1 6 0 0 0 1 6 1 0 -1 2 3 0 -1 0 2 3 1 0 0 2  
4 0 0 -1 2 4 1 0 -1 2 5 -1 -1 1 2 5 0 0 0 2 6 0 -1 -1 2 6 0 -1 0 3 4 0 0 -1 3 4 0 0 0 3 5 -1 -1 1 3 5 -1 0 1 3 6 -1 -1 0 3 6 0 0 -1 4 5 -1 -1 2 4 5 -1 0 1  
4 6 0 -1 0 4 6 0 0 0 5 6 0 0 -1 5 6 1 0 -1

#### Gyroid2 - Information

Space group	$I2_13$
Unit cell lattice	(2.06741, 2.06741, 2.06741)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.25, 0.36081)
Coordinates, edge 1	(0.0, 0.25, 0.36081) ↔ (0.25, 0.36081, 0.0)
Coordinates, edge 2	(0.0, 0.25, 0.36081) ↔ (0.0, 0.75, 0.13919)
Coordinates, edge 3	(0.0, 0.25, 0.36081) ↔ (0.13919, 0.0, 0.75)
Shortest edge length	0.93597
Average edge length	1.00000
Longest edge length	1.13070
Shortest non-bonded distance	1.18312
Smallest angle between edges, degrees	51.69765
Average angle between edges, degrees	97.58374
Largest angle between edges, degrees	151.66474

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 2 0 1 0 1 3 0 0 0 1 3 1 0 0 1 4 0 0 0 1 4 1 1 -1 1 5 0 0 0 1 5 0 0 1 1 6 0 0 0 1 6 1 0 -1 2 3 0 -1 0 2 3 1 0 0 2  
4 0 0 -1 2 4 1 0 -1 2 5 -1 -1 1 2 5 0 0 0 2 6 0 -1 -1 2 6 0 -1 0 3 4 0 0 -1 3 4 0 0 0 3 5 -1 -1 1 3 5 -1 0 1 3 6 -1 -1 0 3 6 0 0 -1 4 5 -1 -1 2 4 5 -1 0 1  
4 6 0 -1 0 4 6 0 0 0 5 6 0 0 -1 5 6 1 0 -1

#### Primitive - Information

Space group	$Pm\bar{3}$
Unit cell lattice	(1.61812, 1.61812, 1.61812)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.0, 0.19107, 0.5)
Coordinates, edge 1	(0.0, 0.19107, 0.5) $\leftrightarrow$ (0.0, 0.80893, 0.5)
Coordinates, edge 2	(0.0, 0.19107, 0.5) $\leftrightarrow$ (0.19107, 0.5, 0.0)
Shortest edge length	0.99978
Average edge length	1.00000
Longest edge length	1.00003
Shortest non-bonded distance	0.61834
Smallest angle between edges, degrees	36.01745
Average angle between edges, degrees	95.33679
Largest angle between edges, degrees	144.00666

**Primitive - Systre-key** 312000121001300013100140001401015000150101600023000240002410125  
-100250012600126101340103411135-11035011360013610145-100460-1046000560-1056000

**Delauney-Dress-symbol** <1:1:120:0 0 0 0 0 0 0 0 30 29 0 0 76 75 118 117 54 53 96 95 0 0 0 0 0 0 0 0 98 97 0 0 56 55 80 79 114 113 0 0 0  
0 0 0 0 0 0 120 119 72 71 92 91 0 0 0 0 0 0 0 0 94 93 0 0 116 115 0 0 0 0 0 0 0 0 0 0 112 111 0 0 0 0 0 0 0 0 0 0 0,20 3 5 7 9 11 13 15 17 19 40  
23 25 27 29 31 33 35 37 39 60 43 45 47 49 51 53 55 57 59 80 63 65 67 69 71 73 75 77 79 100 83 85 87 89 91 93 95 97 99 120 103 105 107  
109 111 113 115 117 119,2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50 52 54 56 58 60 62 64 66 68 70 72 74 76 78  
80 82 84 86 88 90 92 94 96 98 100 102 104 106 108 110 112 114 116 118 120:6 2 2 2 10 4 14 14 2 2 2 6 3 4 2 2 2 4 3 2 2 2 4 2 2 2 2 2 2 2  
2,10 10 10 10 10 10>

**SI.4.36.** [3, 12] on 2\*33.

#### Diamond - Information

Space group	$F4_132$
Unit cell lattice	(2.07055, 2.07055, 2.07055)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.125, 0.125, 0.625)
Coordinates, edge 1	(0.125, 0.125, 0.625) $\leftrightarrow$ (0.375, -0.125, 0.125)
Coordinates, edge 2	(0.125, 0.125, 0.625) $\leftrightarrow$ (0.125, -0.125, 0.375)
Shortest edge length	0.73205
Average edge length	1.00000
Longest edge length	1.26795
Shortest non-bonded distance	1.26795
Smallest angle between edges, degrees	30.00000
Average angle between edges, degrees	97.05009
Largest angle between edges, degrees	180.00000

**Diamond - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 2 0 1 0 1 2 1 0 1 1 3 0 0 0 1 3 1 0 0 1 3 1 0 1 1 3 2 -1 2 1 4 0 0 0 1 4 1 -1 1 1 4 1 -1 2 1 4 1 0 0 2  
3 0 0 -1 2 3 0 0 0 2 3 0 1 -2 2 3 1 0 0 2 4 -1 0 -2 2 4 0 -1 0 2 4 0 0 -1 2 4 1 -1 0 3 4 -1 -1 0 3 4 -1 0 -1 3 4 -1 0 0 3 4 0 -1 1

#### Gyroid1 - Information

Space group	$I2_13$
Unit cell lattice	(1.7143, 1.7143, 1.7143)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.03691, 0.03691, 0.03691)
Coordinates, edge 1	(0.03691, 0.03691, 0.03691) $\leftrightarrow$ (0.46309, -0.03691, -0.46309)
Coordinates, edge 2	(0.03691, 0.03691, 0.03691) $\leftrightarrow$ (0.03691, -0.03691, 0.46309)
Coordinates, edge 3	(0.03691, 0.03691, 0.03691) $\leftrightarrow$ (0.03691, -0.03691, -0.53691)
Shortest edge length	0.74148
Average edge length	1.00000
Longest edge length	1.13336
Shortest non-bonded distance	1.31088
Smallest angle between edges, degrees	40.14993
Average angle between edges, degrees	95.29762
Largest angle between edges, degrees	162.84213

**Gyroid1 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 2 0 1 0 1 2 1 0 0 1 3 -1 0 1 1 3 -1 1 0 1 3 0 0 0 1 3 0 0 1 1 4 -1 1 0 1 4 0 0 0 1 4 0 0 1 1 4 0 1 0 2  
3 -1 0 0 2 3 -1 1 -1 2 3 -1 1 0 2 3 0 0 0 2 4 -1 0 0 2 4 -1 1 -1 2 4 0 0 -1 2 4 0 0 0 3 4 0 0 0 3 4 1 -1 0 3 4 1 0 -1 3 4 1 0 0

#### Gyroid2 - Information

Space group	$I2_13$
Unit cell lattice	(1.7143, 1.7143, 1.7143)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.03691, 0.03691, 0.03691)
Coordinates, edge 1	(0.03691, 0.03691, 0.03691) $\leftrightarrow$ (0.46309, -0.03691, -0.46309)
Coordinates, edge 2	(0.03691, 0.03691, 0.03691) $\leftrightarrow$ (0.03691, -0.03691, -0.53691)
Coordinates, edge 3	(0.03691, 0.03691, 0.03691) $\leftrightarrow$ (0.03691, -0.03691, 0.46309)
Shortest edge length	0.74148
Average edge length	1.00000
Longest edge length	1.13336
Shortest non-bonded distance	1.31088
Smallest angle between edges, degrees	40.14993
Average angle between edges, degrees	95.29762
Largest angle between edges, degrees	162.84213

**Gyroid2 - Systre-key** 3 1 2 0 0 0 1 2 0 0 1 1 2 0 1 0 1 2 1 0 0 1 3 -1 0 1 1 3 -1 1 0 1 3 0 0 0 1 3 0 0 1 1 4 -1 1 0 1 4 0 0 0 1 4 0 0 1 1 4 0 1 0 2  
3 -1 0 0 2 3 -1 1 -1 2 3 -1 1 0 2 3 0 0 0 2 4 -1 0 0 2 4 -1 1 -1 2 4 0 0 -1 2 4 0 0 0 3 4 0 0 0 3 4 1 -1 0 3 4 1 0 -1 3 4 1 0 0

#### Primitive - Information

Space group	$P\bar{4}3m$
Unit cell lattice	(1.41435, 1.41435, 1.41435)
Unit cell angles, degrees	(90.0, 90.0, 90.0)
Coordinates, node 1	(0.25007, 0.25007, 0.25007)
Coordinates, edge 1	(0.25007, 0.25007, 0.25007) $\leftrightarrow$ (0.25007, 0.74993, 0.74993)
Coordinates, edge 2	(0.25007, 0.25007, 0.25007) $\leftrightarrow$ (0.25007, 0.74993, -0.25007)
Shortest edge length	0.99981
Average edge length	1.00000
Longest edge length	1.00009
Shortest non-bonded distance	1.00038
Smallest angle between edges, degrees	59.98130
Average angle between edges, degrees	95.00312
Largest angle between edges, degrees	179.96761

**Primitive - Systre-key** 3 1 2 0 0 0 1 2 1 0 0 1 2 1 0 1 1 3 0 0 0 1 3 0 0 1 1 3 0 1 0 1 4 0 0 0 1 4 1 0 0 1 4 1 1 0 2 3 -1 0 0 2 3 -1 1 0 2 3 0 0 0 2 4 0 0 1 2 4 0 0 1 0 3 4 0 0 0 3 4 1 0 -1 3 4 1 0 0