Table S14. Results of GC–MS analysis of volatiles extracted by mechanical shock crushing from quartz (Blagodatnoye deposit, Yenisei ridge).

Formula	Name	[1]CAS	[2]MW	Quartz 111-129.5	
				[3]RT, min	[4]A, %
Aliphatic hydrocarbons					
Paraffins					
CH_4	Methane	74-82-8	16	1.58	1.151
C_2H_6	Ethane	74-84-0	30	2.33	0.058
C_5H_{12}	n-Pentane	109-66-0	72	7.60	0.068
C_6H_{14}	n-Hexane	110-54-3	86	12.05	0.011
C_7H_{16}	n-Heptane	142-82-5	100	16.19	0.020
C_8H_{18}	n-Octane	111-65-9	114	20.33	0.037
C_9H_{20}	n-Nonane	111-84-2	128	24.26	0.046
$C_{10}H_{22}$	n-Decane	124-18-5	142	27.86	0.079
$C_{11}H_{24}$	n-Undecane	1120-21-4	156	31.24	0.015
$C_{12}H_{26}$	n-Dodecane	112-40-3	170	34.41	0.023
$C_{13}H_{28}$	n-Tridecane	629-50-5	184	38.60	0.021
$C_{14}H_{30}$	n-Tetradecane	629-59-4	198	45.14	0.043
$C_{15}H_{32}$	n-Pentadecane	629-62-9	212	55.28	0.026
$C_{16}H_{34}$	n-Hexadecane	544-76-3	226	71.90	0.050
Olefins					
C_2H_4	Ethylene	74-85-1	28	2.05	0.004
C_4H_8	2-Methyl-1-propene	115-07-1	56	5.70	0.008
C_4H_8	2-Butene	107-01-7	56	5.87	0.009
C_5H_8	1,3-Pentadiene	1574-41-0	68	8.46	0.024
C_5H_8	(E)-1,3-Pentadiene	2004-70-8	68	8.65	0.007
C_6H_{12}	1-Hexene	592-41-6	84	11.69	0.019
C_6H_{10}	(E)-2-Methyl-1,3-pentadiene	926-54-5	82	12.74	0.007
C_7H_{14}	1-Heptene	592-76-7	98	15.78	0.010
C_8H_{16}	1-Octene	111-66-0	112	19.97	0.006
C_9H_{18}	1-Nonene	124-11-8	126	23.94	0.009
$C_{10}H_{20}$	1-Decene	872-05-9	140	27.61	0.014
$C_{11}H_{22}$	1-Undecene	821-95-4	154	30.99	0.012
$C_{12}H_{24}$	1-Dodecene	112-41-4	168	34.20	0.010
$C_{13}H_{26}$	1-Tridecene	2437-56-1	182	38.29	0.016
$C_{14}H_{28}$	1-Tetradecene	1120-36-1	196	44.56	0.019
$C_{15}H_{30}$	1-Pentadecene	13360-61-7	210	54.51	0.086
$C_{16}H_{32}$	1-Hexadecene	629-73-2	224	70.54	0.028
Cyclic hydrocarbons					
Cycloalkanes (naphthenes) and cycloalkenes					
C_5H_{10}	Cyclopentane	287-92-3	70	8.25	0.009
Arenes					
C_6H_6	Benzene	71-43-2	78	12.42	0.018
C_7H_8	Toluene	108-88-3	92	16.92	0.013

C_7H_7F	(Fluoromethyl)benzene	350-50-5	110	20.73	<0.001
C_8H_{10}	Ethylbenzene	100-41-4	106	21.01	0.001
C_8H_{10}	p-Xylene	106-42-3	106	21.30	0.004
C_8H_{10}	o-Xylene	95-47-6	106	21.40	0.001
C_8H_{10}	m-Xylene	108-38-3	106	21.66	0.001
C_8H_8	Styrene	100-42-5	104	21.90	0.004
C_8H_9F	3-Fluoro-o-xylene	443-82-3	124	22.62	0.007
C_8H_9F	p-Fluoroethylbenzene	459-47-2	124	22.88	0.004
C_8H_9F	5-Fluoro-m-xylene	461-97-2	124	24.27	0.002
C_9H_{12}	Propylbenzene	103-65-1	120	24.87	0.008
$C_{10}H_{14}$	Butylbenzene	104-51-8	134	28.73	0.012
$C_{11}H_{16}$	Pentylbenzene	538-68-1	148	32.14	0.010
$C_{12}H_{18}$	Hexylbenzene	1077-16-3	162	35.61	0.008
Oxygenated hydrocarbons					
Alcohols					
CH_4O	Methanol	67-56-1	32	4.29	0.687
C_2H_6O	Ethanol	64-17-5	46	6.12	0.017
C_3H_8O	1-Propanol	71-23-8	60	8.80	0.007
$C_4H_{10}O$	1-Butanol	71-36-3	74	12.55	0.011
C_6H_6O	Phenol	108-95-2	94	24.44	0.028
C_7H_8O	4-Methylphenol	106-44-5	108	28.11	0.001
$C_8H_{10}O_2$	2-Phenoxyethanol	122-99-6	138	32.80	0.007
Ethers and esters					
$C_5H_8O_2$	Methyl methacrylate	80-62-6	100	14.28	0.005
C_5H_8O	3,4-Dihydro-2H-pyran	110-87-2	84	16.43	0.012
$C_4H_6O_2$	Butyrolactone	96-48-0	86	20.13	0.004
$C_6H_{10}O_2$	γ-Hexalactone	695-06-7	114	26.90	0.007
$C_6H_{10}O_2$	Tetrahydro-6-methyl-2H-pyran-2-one	823-22-3	114	29.59	0.040
$C_7H_{12}O_2$	γ-Heptalactone	105-21-5	128	30.61	0.004
$C_8H_{14}O_2$	γ-Octalactone	104-50-7	142	34.11	0.007
$C_9H_{16}O_2$	γ-Nonalactone	104-61-0	156	38.52	0.010
$C_{10}H_{18}O_2$	γ-Decalactone	706-14-9	170	45.24	0.012
$C_{11}H_{20}O_2$	γ-Undecalatone	104-67-6	184	59.30	0.171
$C_{12}H_{22}O_2$	γ-Dodecalatone	2305-05-7	198	73.25	0.034
Aldehydes					
C_2H_4O	Acetaldehyde	75-07-0	44	5.14	0.019
C_3H_4O	2-Propenal	107-02-8	56	6.98	0.009
C_3H_6O	n-Propanal	123-38-6	58	7.27	0.023
C_4H_6O	2-Methyl-2-propenal	78-85-3	70	9.41	0.017
C_4H_8O	2-Methylpropanal	78-84-2	72	9.48	0.004
C_4H_8O	n-Butanal	123-72-8	72	10.24	0.005
$C_5H_{10}O$	3-Methylbutanal	590-86-3	86	13.40	0.018
$C_5H_{10}O$	n-Pentanal	110-62-3	86	14.40	0.012
$C_5H_4O_2$	Furfural	98-01-1	96	16.96	0.001

$C_5H_4O_2$	3-Furaldehyde	498-60-2	96	17.79	0.028
$C_6H_{12}O$	n-Hexanal	66-25-1	100	18.79	0.029
$C_7H_{14}O$	n-Heptanal	111-71-7	114	22.99	0.023
C_7H_6O	Benzaldehyde	100-52-7	106	23.69	0.050
$C_8H_{16}O$	2-Ethylhexanal	123-05-7	128	25.52	0.009
$C_8H_{16}O$	n-Octanal	124-13-0	128	26.88	0.050
$C_9H_{18}O$	n-Nonanal	124-19-6	142	30.42	0.086
$C_{10}H_{20}O$	n-Decanal	112-31-2	156	33.72	0.117
$C_{11}H_{22}O$	n-Undecanal	112-44-7	170	37.71	0.020
$C_8H_6O_3$	Piperonal	120-57-0	150	41.03	0.066
$C_{12}H_{24}O$	n-Dodecanal	112-54-9	184	43.77	0.031
$C_{13}H_{26}O$	n-Tridecanal	10486-19-8	198	53.40	0.067
$C_{14}H_{28}O$	Tertadecanal	124-25-4	212	68.81	0.052
$C_{15}H_{30}O$	n-Pentadecanal	2765-11-9	226	93.83	0.052
Ketones					
C_3H_6O	2-Propanone	67-64-1	58	7.33	0.029
C_4H_6O	2-Butenone	78-94-4	70	9.96	0.002
$C_4H_6O_2$	2,3-Butanedione	431-03-8	86	10.32	0.003
C_4H_8O	2-Butanone	78-93-3	72	10.37	0.005
$C_5H_{10}O$	2-Pentanone	107-87-9	86	14.15	0.010
C_5H_8O	Cyclopentanone	120-92-3	84	16.69	0.004
$C_6H_{12}O$	2-Hexanone	591-78-6	100	18.52	0.007
$C_7H_{14}O$	2-Heptanone	110-43-0	114	22.69	0.014
$C_5H_6O_3$	Dihydro-3-methyl-2,5-furandione	4100-80-5	114	25.89	0.033
$C_8H_{16}O$	2-Octanone	111-13-7	128	26.53	0.020
$C_9H_{18}O$	2-Nonanone	821-55-6	142	30.11	0.024
$C_{10}H_{20}O$	2-Decanone	693-54-9	156	33.37	0.015
$C_8H_4O_3$	1,3-Isobenzofurandione	85-44-9	148	35.15	0.032
$C_{11}H_{22}O$	2-Undecanone	53452-70-3	170	37.21	0.016
$C_{12}H_{24}O$	2-Dodecanone	6175-49-1	184	42.96	0.010
$C_{13}H_{26}O$	2-Tridecanone	593-08-8	198	52.00	0.033
$C_{14}H_{28}O$	2-Tetradecanone	2345-27-9	212	66.38	0.043
$C_{15}H_{30}O$	2-Pentadecanone	2345-28-0	226	90.21	0.096
Carboxylic acids					
$C_2H_4O_2$	Acetic acid	64-19-7	60	11.17	1.899
$C_4H_8O_2$	n-Butanoic acid	107-92-6	88	19.10	0.137
$C_5H_{10}O_2$	3-Methylbutanoic acid	503-74-2	102	22.19	0.013
$C_5H_{10}O_2$	n-Pentanoic acid	109-52-4	102	23.14	0.037
$C_6H_{12}O_2$	n-Hexanoic acid	142-62-1	116	26.62	0.158
$C_7H_{14}O_2$	n-Heptanoic acid	111-14-8	130	30.13	0.043
$C_8H_{16}O_2$	n-Octanoic acid	124-07-2	144	33.25	0.089
$C_9H_{18}O_2$	n-Nonanoic acid	112-05-0	158	36.92	0.085
$C_{10}H_{20}O_2$	n-Decanoic acid	334-48-5	172	42.36	0.128
$C_{11}H_{22}O_2$	n-Undecanoic acid	112-37-8	186	51.49	0.011

$C_{12}H_{24}O_2$	n-Dodecanoic acid	143-07-7	200	64.85	0.143
$C_{14}H_{28}O_2$	3-Methyltridecanoic acid	x	228	110.42	0.412
$C_{14}H_{28}O_2$	n-Tetradecanoic acid	544-63-8	228	123.74	0.128
Heterocyclic compounds					
Dioxanes					
$C_4H_8O_2$	1,4-Dioxane	123-91-1	88	13.32	0.001
$C_{10}H_{16}$	dl-Limonene	138-86-3	136	27.96	0.009
Furans					
C_5H_6O	2-Methylfuran	534-22-5	82	10.14	0.001
C_6H_8O	2-Ethylfuran	3208-16-0	96	13.95	<0.001
C_6H_6O	2-Vinylfuran	1487-18-9	94	14.70	<0.001
$C_7H_{10}O$	2-Propylfuran	4229-91-8	110	17.61	0.028
$C_8H_{12}O$	2-Butylfuran	4466-24-4	124	23.26	0.001
$C_9H_{14}O$	2-Pentylfuran	3777-69-3	138	26.15	0.004
Pyrans					
$C_6H_{11}BrO$	2-(Bromomethyl)tetrahydro- 2H-pyran	34723-82-5	178	29.49	0.004
Nitrogenated compounds					
N_2	Nitrogen	7727-37-9	28	1.51	0.512
C_2H_3N	Acetonitrile	75-05-8	41	6.53	0.031
C_3H_5N	Propargylamine	2450-71-7	55	9.03	0.001
C_4H_5N	Pyrrole	109-97-7	67	14.20	0.011
C_2H_5NO	Acetamide	60-35-5	59	14.78	0.259
C_5H_5N	Pyridine	110-86-1	79	14.91	0.003
$C_3H_5NO_2$	2-Oxo-propionamide	x	87	17.72	0.022
C_6H_9N	2,3-Dimethyl-1H-pyrrole	600-28-2	95	18.82	0.002
C_6H_7N	2-Methylpyridine	109-06-8	93	18.32	0.001
$C_6H_{13}N$	1-Methylpiperidine	626-67-5	99	19.00	0.004
$C_3H_4N_2$	1H-Pyrazole	288-13-1	68	22.23	0.013
C_4H_7NO	2-Pyrrolidinone	616-45-5	85	25.70	0.017
$C_4H_7NO_2$	N-Acetyl-acetamide	x	101	25.74	0.006
$C_{10}H_{11}NO_4$	3-Nitrobenzeneethanol acetate	68527-46-8	209	102.71	0.704
Sulfonated compounds					
H_2S	Hydrogen sulfide	7783-06-4	34	2.93	0.008
COS	Carbonyl sulfide	463-58-1	60	3.43	0.001
O_2S	Sulfur dioxide	7446-09-5	64	5.14	0.128
CH_4S	Methanethiol	74-93-1	48	5.37	0.009
CS_2	Carbon disulfide	75-15-0	76	7.70	0.005
$C_2H_6S_2$	Dimethyl disulfide	624-92-0	94	15.11	0.004
C_5H_4OS	3-Thiophenecarboxaldehyde	498-62-4	112	25.95	0.001
Inorganic compounds					
Oxides					

CO_2	Carbon dioxide	124-38-9	44	1.75	3.598
H_2O	Water	7732-18-5	18	2.93	87.032
Noble gases					
Ar	Argon	7440-37-1	40	1.50	0.018

Note: [1]CAS – unique numerical identifier of chemical compounds included in the register Chemical Abstracts Service (https://www.cas.org); [2]MW – nominal mass; [3]RT – retention time; [4]A – normalized area (the area ratio of the individual gas mixture components to the sum of the areas of all the components in the chromatogram).