



Material: OLIVINE FOR WATER-JET CUTTING

MATERIAL SAFETY DATA SHEET

Section I. Identification of the Substance and of the Company

Product Name	Olivine for Water-Jet Cutting
Distributor:	GritSablare
Headquarter:	10 Eliza Zamfirescu Leonida Street, Bucharest
Storage & Logistic:	Constanța Seaport, Gate 2, SORENA Platform, Constanța, Romania
Phone:	(+4) 0722.279.481
Email:	comercialgritsablare@gmail.com
Website:	www.gritsablare.ro

Section II. Physical and Chemical Properties

Particle Size Distribution and Properties

Mean values. These do not represent a specification.

Parameter	Method	Unit	Typical Value
Specific Gravity		g/cm ³	3.25
Initial Sintering		°C	Approx. 1450
Melting Point		°C	Approx. 1760
Thermal Expansion	at 1200°C - Linear	%	Approx. 1.1
Bulk Density, Loose	EN 1097-3	g/cm ³	1.7
Hardness		Mohs' Scale	6.5 – 7.0
pH (milled)			8.9 – 9.5

	Sieve size	Olivine No 11 PO	Olivine AFS 120 DS	Olivine MIX 1675 DS	Olivine AFS 80 DS	Olivine AFS 50 DS	Olivine AFS 45 DS	Olivine AFS 30 DS	Olivine MIX 1800 DS	Olivine AFS 20DS
% Retained on individual sieves	mm	%	%	%	%	%	%	%	%	%
	1.4	-	-	-	-	-	-	-	1.7	17.2
	1	-	-	-	-	-	0.1	0.2	4	40
	0.71	-	-	-	-	0	4.5	13	8	25
	0.5	-	-	-	-	0.1	13	35	14	8
	0.355	-	-	0.1	0	7	22	40	18.3	5
	0.25	0.1	0	0.4	0.3	49.8	35.5	9	15.5	2
	0.18	0.2	0.3	17.8	35.2	34	18.9	1.5	13	1
	0.125	1.4	37.5	38.6	50.8	7.5	5	0.5	13	1
	0.09	3.8	38	23	10.3	1.2	0.7	0.2	6	0.5
0.063	6.3	16	10.8	2.9	0.4	0.2	0.1	3	0.2	
<0.063	88.2	8.2	9.3	0.5	0.1	0.1	0.1	0.1	3.5	0.1

Chemical Composition

Mean values. These do not represent a specification.

		Olivine No 11 PO	Olivine AFS 120 DS	Olivine MIX 1675 DS	Olivine AFS 80 DS	Olivine AFS 50 DS	Olivine AFS 45 DS	Olivine AFS 30 DS	Olivine MIX 1800 DS	Olivine AFS 20DS	
% by weight	MgO	Magnesium Oxide	46.5	49.3	49.4	49.7	50	50	50.2	49.9	49.9
	SiO₂*	Silicon Oxide*	41.5	41.6	41.7	41.8	41.6	41.5	41.4	41.5	41.5
	Fe₂O₃	Iron Oxide	6.8	7.6	7.4	7.5	7.4	7.4	7.4	7.4	7.4
	Al₂O₃	Aluminium Oxide	0.75	0.3	0.42	0.3	0.41	0.42	0.42	0.4	0.34
	Cr₂O₃	Chromium Oxide	0.44	0.77	0.55	0.44	0.29	0.28	0.26	0.36	0.32
	NiO	Nickel Oxide	0.3	0.32	0.32	0.32	0.32	0.32	0.32	0.32	0.32
	MnO	Mangan Oxide	0.08	0.09	0.09	0.09	0.09	0.09	0.09	0.09	0.09
	L.O.I.**	Loss on Ignition**	4	0.6	0.7	0.6	0.6	0.6	0.6	0.7	0.7

* Present as silicate, contains < 0.1% free crystalline silica.

** Weight reduction after 30 minutes at 900°C/air.

Section III. Hazard Ratings

POISONS SCHEDULE

None

Spec	Rating *
Flammability	0
Toxicity	1
Body Contact	0
Reactivity	0
Chronic	0

* Ratings: Minim/Nil = 0, Low = 1, Moderate = 2, High = 3, Extreme = 4

STATEMENT OF HAZARDOUS NATURE

NON-HAZARDOUS SUBSTANCE.

NON-DANGEROUS GOODS

According to the criteria of NOHSC, and the ADG code

Section IV. Composition / Information on Ingredients

Name	Olivine mineral
CAS RN (%)	1317-71-1 (>99%)

Section V. First Aid Measures

Swallowed: Overexposure is unlikely in this form and quantity.

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

Eye: If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- If pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

Skin: If skin or hair contact occurs:

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

Inhaled:

- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

Notes to physician: Treat symptomatically.

Section VI. Fire Fighting Measures

Extinguishing Media:	Non combustible. Use extinguishing media suitable for surrounding area. <ul style="list-style-type: none"> There is no restriction on the type of extinguisher which may be used.
Fire fighting:	Use fire fighting procedures suitable for surrounding area. Product is not combustible. No special fire fighting procedures required.
Fire / explosion hazard:	<ul style="list-style-type: none"> Non combustible. Not considered a significant fire risk, however containers may burn.
Fire incompatibility	No known incompatibility with normal range of industrial materials.
Hazchem:	None

Section VII. Accidental Release Measures

EMERGENCY PROCEDURES

Minor spills	<ul style="list-style-type: none"> Clean up all spills immediately. Use dry clean up procedures and avoid generating dust. If exposure to workplace dust is not controlled, respiratory protection is required; wear SAA approved dust respirator. Vacuum up or sweep up. Place in suitable containers for disposal.
Major spills	<p>Minor hazard.</p> <ul style="list-style-type: none"> Clear area of personnel and move upwind. If inhalation risk of exposure exists, wear SAA approved dust respirator. Collect recoverable product into labelled containers for recycling.

Safe storage with other classified chemicals



	+	+	+	+	+	+
x	Must not be stored together					
o	May be stored together with specific preventions					
+	May be stored together					

Section VIII. Handling and Storage

Procedures for handling:	Avoid generating and breathing dust. <ul style="list-style-type: none"> Limit all unnecessary personal contact. Wear protective clothing when risk of exposure occurs. Use in a well-ventilated area.
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- When handling DO NOT eat, drink or smoke.
- Always wash hands with soap and water after handling.
- Avoid physical damage to containers.
- Use good occupational work practice.
- Observe manufacturer's storing and handling recommendations.

Suitable container:

Multi ply paper bag with sealed plastic liner or heavy gauge plastic bag.

NOTĂ: Bags should be stacked, blocked, interlocked, and limited in height so that they are stable and secure against sliding or collapse. Check that all containers are clearly labelled and free from leaks. Packing as recommended by manufacturer.

Storage incompatibility:

Keep dry.

Storage requirements:

- Keep dry.
- Store under cover.
- Protect containers against physical damage.
- Observe manufacturer's storing and handling recommendations.

Section IX. Exposure controls / Personal Protection

EXPOSURE CONTROLS:

Source	Material	TWA ppm	TWA mg/m ³	STEL ppm	STEL mg/m ³	Peak ppm	Peak mg/m ³	TWA F/CC
European Exposure Standards	Olivine mineral (Inspirable dust not specified)		10					

The following materials had no OELs on our record under the following CAS or Chemwatch (CW) numbers

- Olivine: No data available for CW:4600-25
- Olivine mineral: No data available for CAS:1317-71-1

Emergency exposure limits

Not available. Refer to individual constituents.

Ingredient data olivine mineral:

Not available.

PERSONAL PROTECTION



Eye:

- Safety glasses with side shields; or as required,
- Chemical goggles.
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lens or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove

contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59]

Hands / Feet:	PVC gloves.
Other:	<ul style="list-style-type: none"> ▪ Overalls. ▪ Eyewash unit.

RESPIRATOR:

Protection Factor	Half-Face Respirator	Full-Face Respirator	Powered Air Respirator
10 x ES	P1 Air-line*	-	PAPR-P1
50 x ES	Air-line**	P2	PAPR-P2
100 x ES	-	P3	-
100+ x ES	-	Air-line*	-
		Air-line**	PAPR-P3

* Negative pressure demand

** Continuous flow

- The local concentration of material, quantity and conditions of use determine the type of personal protective equipment required.
- For further information consult site specific CHEMWATCH data (if available), or your Occupational Health and Safety Advisor.
- Protection Factor Half-Face Respirator Full-Face Respirator Powered Air Respirator.

ENGINEERING CONTROLS

Use in a well-ventilated area:

- Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powered by mutual friction.
- Exhaust ventilation should be designed to prevent accumulation and recirculation of particulates in the workplace.
- If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered. Such protection might consist of:
 - Particle dust respirators, if necessary, combined with an absorption cartridge;
 - Filter respirators with absorption cartridge or canister of the right type;
 - Fresh-air hoods or masks.
- Build-up of electrostatic charge on the dust particle, may be prevented by bonding and grounding.
- Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.

Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to efficiently remove the contaminant.

Type of Contaminant:

Direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion).

Air Speed:

1-2.5 m/s (200-500 f/min.)

Grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).

2.5-10 m/s (500-2000 f/min.)

Within each range the appropriate value depends on:

Lower end of the range

1. Room air currents minimal or favourable to
2. contaminants of low toxicity or of nuisance value
3. Intermittent, low production.
4. Large hood or large air mass in motion

Upper end of the range

1. Disturbing room air currents
2. Contaminants of high toxicity
3. High production, heavy use
4. Small hood-local control only

Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used..

Section X. Physical and chemical properties

APPEARANCE:

Grey/green odourless solid; insoluble in water. Highly refractory with very high melting point. Highly basic igneous rock with no free silica. Olivine is a group name covering a family of solid solutions of iron and magnesium silicates of indefinite composition. High iron content gives black colour; low iron gives green colour.

PHYSICAL PROPERTIES:

Description	Solid Does not mix with water Sinks in water
Shape particle	Angular
Density	3,2 g/cm ³
Hardness	6,5 – 7 Mohs scale
Melting point (°C)	Approx. 1780 °C
Initial sintering (°C)	Approx. 1450 °C
pH	7,5 – 8
Molecular Weight	Not available
Solubility in water (g/L)	Immiscible
pH (1% solution)	Not available
Volatile Component (%vol)	Nil

Professional Blasting Materials

Relative Vapour Density (air=1)	Not available
Lower Explosive Limit (%)	Not available
Auto ignition Temp (°C)	Not available
Boiling Range (°C)	>2000
Specific Gravity (water=1)	3,2 – 3,3
Vapour Pressure (kPa)	Nil @ 38C
Evaporation Rate	Non-volatile
Flash Point (°C)	Non Flammable
Upper Explosive Limit (%)	Not available
Decomposition Temp (%)	Not available
Viscosity:	Not available

Section XI. Chemical Stability and Reactivity Information

Conditions contributing to instability Product is considered stable and hazardous polymerisation will not occur.

Section XII. Toxicological Information

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

- Swallowed
 - Considered an unlikely route of entry in commercial/industrial environments.
 - Considered to be non toxic.
 - Not normally a hazard due to the physical form of product. The material is a physical irritant to the gastrointestinal tract and may be harmful if swallowed.
- Eye
 - The dust is abrasive and discomforting to the eyes.
- Skin
 - The dust is abrasive and may be discomforting to the skin.
- Inhaled
 - Particulate/dust is highly discomforting to the upper respiratory tract.

CHRONIC HEALTH EFFECTS

- Principal routes of exposure are usually by inhalation of generated dust and eye contact, skin contact with the material.
- As with any chemical product, contact with unprotected bare skin; inhalation of vapour, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

TOXICITY AND IRRITATION

- Not available. Refer to individual constituents.
- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances

OLIVINE MINERAL

- No data of toxicological significance identified in literature search.

Section XIII. Ecological Information

Ecological information: No data for Olivine.

Section XIV. Disposal Considerations

- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Management Authority for disposal.
- Bury residue in an authorised landfill.

Section XV. Transportation information

Hazchem: None
Not regulated for transport of dangerous goods: UN, IATA, IMDG

Section XVI. Regulatory Information

Poisons chemicals: None
Regulations: Olivine mineral (CAS: 1317- 71- 1) is found on the following regulatory lists:

- Australia Exposure Standards
- OECD Representative List of High Production Volume (HPV) Chemicals

Section XVII. Other information

None

Disclaimer/Statement of Liability

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