Corgom srl
s.p. 231 km 30,600 – 70033 Corato (BA)
Tel7Fax 080.8721418
www.corgom.it – info@corgom.it

SECURITY DATA SHEET

CORGOM GRAN 1 – (2,0 – 4,0 mm)

Last update: 06/07/2015

1. PRODUCT AND COMPANY IDENTIFICATION:

Trade name: CORGOM GRAN 1
Type of product and use: Poweder/granulate rubber based on vulcanized rubber polymer for industrial and sporting use (funds, isolation, flooring, etc.) (particle size 2,0 – 4,0 millimeters).
Manufacturer / Distributor: Corgoms.r.l. – s.p. 231 km. 30,600Corato (BA) – ITALY, Phone/fax number: 080/8721418.

Relevant identified uses of the product and recommended uses
Description of common uses:
Additive for road asphalts; fillers in artificial turf covers of sports fields; component of equipment for play and play structures, indoor and outdoor floors; products for nursery flora; building products; various infrastructures; of products for civil engineering; component of insulation panels; Acoustic.
Groups of main users:
SU3: Industrial uses: uses of substances as such or in preparations at industrial sites.
SU22: Professional uses: public sector / administration, education, entertainment, services, craftsmanship.
End-use sector:
SU11: Manufacture of rubber articles;
SU12: Manufacture of plastic materials, including mixing (compounding) and conversion;
SU13: Manufacture of non-metallic mineral products, for example plasters, cement;
SU19: Buildings.
Process categories:
PROC21: Handling with low energy consumption of substances present in material and / or articles.
PROC23: Machining and transfer operations in open processes with minerals / metals and high temperatures.
Release categories in the environment:
ERC5: Industrial use that results in inclusion in a matrix or application to a matrix.
Uses advised against: avoiding uses that involve direct and prolonged or repeated contact and in the short term with human skin or oral cavity.

2. DANGERS IDENTIFICATION

Physical-chemical dangers: in case of combustion it can generate toxic fumes.
Health Danger: Not classified as dangerous for human health according to the criteria established by regulation 1272/2008.
Rubber powder and granulate may cause a temporary and slight irritation to eyes. They do not contain carcinogenic substances concentrations higher than 0.1% and do not contain B(a)P in concentrations higher than 0.05%.

Uses that involve direct and prolonged or repeated short-term contact with human skin or oral cavity should be avoided, because the concentration of IPA may be above the limit of 1 ppm, as indicated by regulation 1272/2013.
The mixture is not classified as dangerous for the aquatic environment.
The mixture is free from acute toxicity to the aquatic environment, based on aquatic toxicity tests carried out in compliance with the EC regulation 1907/2006 and the EC regulation 440/2008.
Other Dangers: The rubber powder sized of 200 µm or less is classified as weakly explosive (Category ST1 according to the method UNI EN14034-2: 2011). The rubber powder is not a flammable solid according to the CLP Regulation. The auto-flammability temperature according to CEI EN 50281-1-2-1 (Method B), 1999 is equal to 430 °C.
The mixture is not classified as dangerous.

3. COMPOSITION/INFORMATION ON INGREDIENTS

In compliance with the regulation 1907/2006, the substances in it present in concentrations greater than or equal to 1% are listed below if according to this regulation these substances present dangers to health or the environment according to the regulation, or for which there are exposure limits in the workplace. In the rubber powder there are not concentrations higher than 0.1% by weight of persistent, bioaccumulative and toxic substances according to the criteria set out in Annex XIII, or included in the list drawn up pursuant to Article 59 (1), for different reasons from dangers referred to in point (a).

Substance	CAS	EC	% weight
carbon black	1333-86-4	215-609-9	20-25 %
Silicates: Magnesium silicate: Alluminium silicate:	 14807-96-6 1332-58-7	 238-877-9 310-194-1	6-7 %
Zinc oxide*	1314-13-2	215-222-5	1.5-2 % (bioavailable <0.0003 %)
TDAE oil **	64741-88-4	265-090-8	<20 %
Low viscosity oil	64742-65-0	265-169-7	<20 %
Naphtenic oil	CAS 64742-52-5	265-155-0	<20 %
TDAE oil **	CAS 68783-04-0	272-180-0	<20 %

* About zinc, based on leaching tests carried out under conservative conditions (DIN 18035-7 method) the actually bioavailable zinc oxide concentration is at worst 0.003%. The art. 12 of the EC regulation 1272/2008 "CLP", which states that "conclusive experimental data, whose relevance and reliability have been ascertained, show that the substance or mixture is not biologically available"

** According to the manufacturer's safety data sheets, for all oils used in the production of tires is applied note L of Annex VI of Regulation 1272/2008 EC, which states that "Classification as a carcinogen is not necessary and demonstrate that the substance contains less than 3% of Dmso according to measurement IP 346 << Determination of aromatic polycyclics in unused lubricating base oils and in oil fractions without asphaltenes - extraction of dimethyl sulfoxide >>, Institute of Petroleum, London. This note applies only to certain compounds derived from petroleum contained in Part 3.

4. FIRST AID MEASURES:

- Contact with skin:
  In case of contact with skin, in presence of redness, wash through with soap and water or other detergent suitable for skin cleansing.
- Contact with the eyes:
  Immediately remove any contact lenses; do not rub your eyes; rinse immediately with plenty of water for at least 10 minutes.
- Ingestion:
  Eject the material introduced into the oral cavity, rinse with plenty of water. If you experience problems, consult a doctor.
- Inhalation (*)

Immediately remove the person from the contaminated area to rest in a well-ventilated one. In case of uneasiness or irregular breathing, consult a doctor. Ventilate the zone.

(*) in relation to the fine particles (dusts)
Consult a doctor immediately in case of:
- prolonged exposure to high concentrations of the respirable fraction of pFU powder in non-ventilated areas and with symptoms of asphyxia.
- exposure to combustion fumes.

5. FIRE-FIGHTING MEASURES:

The product is highly flammable. If involved in a fire, it burns releasing hazardous fumes and vapors. The trigger suspension of fine dusts in the air, in confined spaces, at certain concentrations, it may cause explosion.

Suitable extinguishing ways: Water, CO_2, alcohol resistant lather, dust.

Prohibited extinguishing ways: None in particular.

Exposure hazards: During combustion organic vapors and hazardous fumes are formed, typical of combustion which may be exposed the people nearby and the firefighters.

Means of protection: Firefighters should use masks with activated carbon.
In case of insufficient ventilation (oxygen deficiency) use self-contained breathing.

6. ACCIDENTAL LEAKAGES MEASURES

Not expected conditions of risk due to accidental dispersion.
Personal precautions: In case of dust diffusion, ventilate the zone; use gloves, safety glasses and protection clothing.
For situations who might present clear exposure to dusts, use facial filters (at least FFP1).
Environmental precautions:Avoid ignition source, exclude the non-necessary people presence.
Ways to clean up:Collect the product with the normal means and methods of mechanical cleanliness.

7. PRECAUTION FOR SAFE HANDLING
Protective Measures
Direct use: The smallest particle size powder normally used as an additive to asphalt mixtures must be mixed through closed circuit systems that prevent the dispersion in the atmosphere during use.
In the handling of rubber powder it is necessary to adopt devices of
personal protection such as gloves, goggles, dust masks, protective clothing to prevent continuous or repeated short-term contact with the skin.
Hygiene at work
Use good cleaning practices during storage, transfer and handling.
Do not eat, drink or smoke during work hours. Wash hands after use.
Remove contaminated clothing and protective equipment before accessing the areas where you eat.
Conditions for safe storage, including any incompatibilities
Store the product in the original packaging intact, in ventilated areas and away from sources of ignition.
Store in appropriately labeled containers. Keep containers tightly closed when not in use.Set up a fire detection system and automatic shutdown system in storage areas.

Protect from heat sources.
Keep away from feed, food and drink.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

National occupational exposure limit values corresponding to Community limit values

Nome	**N. CAS**	**Limite misurato e calcolato ad un periodo di riferimento di 8 ore (TLV – TWA)**	**Fonte**
Lamp black	1333-86-4	3,5 mg/m^3	NIOSH e OSHA
Zinc oxide	1314-13-2	Breathable fraction / fumes: 10 mg / m^3 Total dust: 15 mg / m^3	OSHA
		Breathable fraction: 2 mg/ m^3	ACGIH
		Total dust/fumes: 5 mg/ m^3	NIOSH
magnesium silicate	14807-96-6	2 mg/ m^3	ACGIH e NIOSH
aluminum silicate	1332-58-7	Breathable fraction: 5 mg/ m^3	NIOSH
		Breathable fraction: 2 mg/ m^3	ACGIH

Occupational exposure limit values established by other bodies having no legal value

Inhalable powders PNOC: 10 mg/ m^3	TLV, source
Inhalable powders PNOC: 3 mg/ m^3	TLV, source

Information on recommended exposure monitoring procedures

Standards UNI EN 481 1994: Atmosphere in the workplace. Definition of the particle size fractions for the measurement of airborne particles.
Standards UNI EN 689 1997: Atmosphere in the workplace. Guide to the evaluation of inhalation exposure and chemical compounds for comparison with limit values and measurement strategy.
UNI EN 482:1998: Atmosphere in the workplace. General requirements for the performance of chemical agent measurement processes.
UNI EN 1540:2001: Atmosphere in the workplace. Terminology.
Source: technical reference standards for the correct implementation of exposure monitoring (ANNEX XLI Legislative Decree 81/08 supplemented by Legislative Decree 106/09).

Regarding the occupational exposure of PAHs, although no increase in occupational exposure has been demonstrated to these substances resulting from the use of ELT powder as an additive in asphalt, it is recommended to refer to the limit values for occupational exposure established for the specific field of application recommended by the sector bodies.
Specifically, Germany poses a limit of 2 μg/ m^3, for B (a) P, as TRK, OSHA poses for PAHs total (as a benzene-extractable station) the limit of 0,2 mg/ m^3, expressed as TLV-TWA, ACGIH and NIOSH, on the other hand, does not establish numerical limits with the recommendation to maintain exposure, whatever is the route of exposure, at the lowest detectable concentration (at the time of 1recommendation equal to 0,1 mg/ m^3 for volatile coal tar events).

Information on the formation of possible air pollutants following an intended use
The intended uses of ELT powder referred to in point 1.2 may cause the formation of atmospheric pollutants. In case of use as asphalt additive, if the coating is carried out at temperatures above 170 ° C, the release of unpleasant odors caused by sulphurous substances may occur, this may cause temporary discomfort to workers. It is therefore recommended to keep the laying temperature below 170 ° C.

Exposure controls

Suitable technical checks
Minimize exposure to dust. Check the operation of the ventilation / ventilation systems
Individual protection measures

a) **Eye and face protection:** in case of eyes contact risk wear protective goggles (Standard EN 166)
b) **Skin protection:** in case of prolonged contact with skin wear protective gloves (Standard UNI EN 374)
c) **Respiratory protection:** in case of direct exposure use approved respiratory filtration masks, at least FFP1 type (Standard EN 149:2001).
d) **Environmental exposure controls:** Eventual drains and eventual discharge ways must be provided with suitable filtering systems for the capture of material with variable particle size.

9. PHYSICAL AND CHEMICAL PROPERTY

CHARACTERISTIC		**METHOD OF USE**
Appearence	Color dark grey or black	
Physical state	Solid elastomer	
Form	Powder	
Granulometry	Maximum size of the granule 0.8mm	
Odor	Rubbery smell	
Olfactory threshold	n.a.	
pH	7,3 – 7,9	
Fusion point/freezing point	n.a.	
Initial boiling point	n.a.	
Flammability point	n.a.	
Evaporation point	n.a.	
Flammability (solids and gases)	Hardly flammable	Council Regulation (EC) No 440/2008 of 30 May 2008, Part A: Methods for the Determination of Psycho-Chemical Properties: A:10 "Flammability (solids)
Flammability(solids)	It is not an easily combustibile substance of the ADR class 4.1 nor a flammable solid under the CLP regulation	United Nations Document, Recommendations on the Transport of Dangerous Goods. Test N.1
Flammability upper/lower limit	60 g/m^3	UNI 14034-3:2011
Explosiveness upper/lower limit	n.a.	
Vapor pressure	n.a.	
Vapor density	n.a.	
Relative density	0,46 – 0,51 g/c m^3	STM D297/81 p. to 15
solubility	Partially soluble in acetone, aromatics, setone, chlorinated	
Repair factor	n.s.	
Auto ignition temperature in layer (5mm)	300°C	CEI-EN 50528-1,2,1,199
Auto-flammibility temperature	430°C	CEI-EN 50528-1,2,1, (Metodo B) 1999

Viscosity	n.a.	
		440/2008 of 30 May 2008, Part A: Methos for the Determination of Physico-Chemical Properties: A.1 "Melting/Freezing Temperature (Capillary Method)"
Viscosity	n.a.	
Explosive proprieties	n.a.	
Polymeric content	n.a.	
Acetone extract	41 – 47% p/p	ASTM D297/81 p.to 12
	18 – 21% p/p	ASTM D297/81 p.to 18

10. STABILITY AND REACTIVITY

Reactivity: Not reactive.
Chemical stability: Stable in all ordinary circumstances and in normal conditions of use.
Possible Dangerous Reactions: none
Condition to avoid: Keep away from heat / sparks / open flames / hot surfaces. Not smoking.
Incompatible materials: none
Decomposition products: none

11. TOXICOLOGICAL INFORMATION

The information given in this section, unless otherwise specified, refers to the material identified as ELT granules.

a) Acute toxicity

Oral exposure-ingestion: No data available
Dermal exposure-absorption through skin and eyes: No data available
Inhalation exposure: No data available

b) Corrotion/skin irritation

Corrosion: no evidence of corrosive actioN
Skin irritation: no data available

c) Serious eyes damage/serious eyes irritation:

Serious eyes damage: no data available
Serious eyes irritation: no data available

d) Respiratory / skin sensitization:

Respiratory sensitization: no data available
Skin sensitization: no data available

e) Germ cell mutagenicity:

Generic in vitro toxicity:

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genotoxicity type	types of study	Anima species	Result	Year	Source
Genotoxicity was assessed by increasing The number of colonies tested (minimum increase of 1.5) compared to controls, demonstrating a dose dependent response.	Mutagenicity Fluctuation Assay SOS chromotest Mutatox	*Salmonella Typhimurium* TA98, TA100, TA1535 and TA1537	Absent of toxicity. No test demonstrates an obvious genotoxicity. No tests performed with microsomal activation demonstrate genotoxic activity. No damage to DNA or chromosomes.	2003	A.Birkholz, K.L. Belton, T.L. Guidotti. Toxicological Evaluation for the Hazard Assessment Of Tire Crumb for Use in Pubblic Playgrounds.

f) Carcinogenicity:

Carcinogenicity: No data available

g) Reproductive toxicity:

Harmful Effects on fertility and sexual function: no data available
Harmful effects on progeny development: no data available
Effects on breastfeeding: no data available

h) Specific target organ toxicity (STOT):

Single exposition: no data available
Repeated exposition: no data available

i) Aspiration danger

Aspiration danger: no data available

12. ECOLOGICAL INFORMATION

Toxicity: The granules / powders of ELT is made up of substances whose diffusion in air is considered to be high level. More significant is the release of substances in water, sediments and soil, with particular reference to zinc.

Biodegradation: The product is not biodegradable.

Adopt all necessary measures to prevent the product is not released into the environment and waterways and drainage system.

CORGOM GRAN 1 (2,0 – 4,0 mm)

Bioaccumulation potential: N.A.

Test type	**Result**			**Source**
Acute toxicity test for nvertebrates	**24-h EC50 (mg/l)**	**48-h EC50 (mg/l)**	**NOAEC (mg/l)**	
Daphnia Magna	>100	>100	100	Noè, Dini (2012)
Daphnia Magna		26750; 53300		Gualtieri et al. (2005b)
Daphnia Magna	300-32000			Wik and Dave (2005)
Daphnia Magna		100-2400		Wik and Dave (2005)
Daphnia Magna		60-400		Wik and Dave (2005)
Daphnia Magna	1200->10000			Wik and Dave (2006)
Daphnia Magna		300->10000		Wik and Dave (2006)
Daphnia Magna		370-7500		Wik et al. (2008)
Cerriodaphniadubia		550-5000		Wik et al. (2008)
D.magna (Sediment elutriate)		>10000	>10000	BrittMcAtee et
				Al. (2011)
D.magna(Leachate, 44°C)		4360 (3660-5250)	1250	BrittMcAtee et al. (2011)
D.magna(Leachate, 21°C)		>10000		BrittMcAtee et al. (2011)
D.magna(Leachate + sediment, 44°C)		5080(4280-6070)		BrittMcAtee et al. (2011)
D.magna(Leachate + sediment, 21°C)		>10000		BrittMcAtee et al. (2011)
Chronic toxicity test for invertebrates			**NOAECH (mg/l)**	
Ceriodaphiadubia			194	Wik et al. (2008)
Acute toxicity test for algae			**NOAECH (mg/l)**	
			9.8	Noè, Dini (2015)
	72-h EC50 (mg/l)			
P.subcapitata (growth rate) Sediment elutriate	>10000		>10000	BrittMcAtee et al. (2011)
Pseudokirchneriellasubcapitata	470; 1640			Gualtieri et al. (2005b)
Pseudokirchneriellasubcapitata	50-2800			Wik et al. (2008)
Acute toxicity test for fish	**48-h LC50 (mg/l)**	**96-h LC50 (mg/l)**		
Zebrafish*Danio rerio*	>100	>100	100	Noè, Dini (2012)
Acute toxicity test for fish		**48-h LC50 (mg/l)**		
Zebrafisheggs Danio rerio		550->10000		Wik et al. (2008)

Bioaccumulation potential: N.A.
Mobility in the soil: N.A.
Results of PBT or vPvB evaluations: N.A.
Other adverse effects: N.D

13. DISPOSAL CONSIDERATIONS

Waste treatment method

The handling, use and transport of granules / powders of ELT do not generate waste or residues that require disposal. The production of powder may produce waste material ,that does not meet the quality standards, sent then for disposal. Given that the producer of the material is the person responsible for assigning the most relevant CER code to the waste on the basis of the production cycle that generated it, the following reference code is indicated if the waste is produced by a waste treatment plant.

CER 19.12.04 Plastic and rubber

To dispose of the waste deriving from the product, comply with Legislative Decree 152/06 and s.m.i. If possible recover or send to authorized facilities or incineration under controlled conditions.
Disposal of containers: do not dispose containers in the environment.
Dispose of according to local regulations.

14. TRANSPORT INFORMATION

UN number: n.a.

UN shipping name: n.a.

Danger classes related to transport

Road / rail transport (ADR/RID)	Maritime transport (IMDG Code)	Air transport (IATA DGRD)
Not classified	Not classified	Not classified

Packing group

Road / rail transport (ADR/RID)	Maritime transport (IMDG Code)	Air transport (IATA DGRD)
II	n.a.	n.a.

Dangers for the environment

Road / rail transport (ADR/RID)	Maritime transport (IMDG Code)	Air transport (IATA DGRD)
Non pericoloso per l'ambiente ai sensi dell'ADR	n.a.	n.a.

Special precautions for users
During the loading / unloading phases of the material, refer to precautions described in the sec. 7 regarding safe handling. Make sure in advance about the compatibility of common loading with other goods loaded.

Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code: n.a.

15. REGULATORY INFORMATION

Rules and legislation on health, safety and environment specific for substance and mixture

- Legislative Decree 3-4-2006 n.2006 n. 152 - Environmental regulations.
- Regulation (EC) No. 1272/2008 on the classification, labeling and packaging of substances and mixtures.
- Regulation (EC) No 790/2009 / EC amending for the purposes of the adaptation to technical and scientific progress of Regulation (EC) No 1272/2008.
- Legislative Decree 9 April 2008, n. 81 Consolidated Law on Health and Safety at Work.
- Regulation (CE) n. 1907/2006 of the European Parliament and of the Council concerning the registration, evaluation, authorization and restriction of chemical substances (REACH).
- Ministerial Decree 5 February 1998 identification of non-hazardous waste subjected to simplified recovery procedures pursuant to articles 31 and 33 of Legislative Decree 5 February 1997, n. 22.

Evaluation of chemical safety

Pursuant to article 2, paragraph 7, letter b) of the EC Regulation n.1907 / 2006 and s.m.i., the substance is exempted from the application of the deposits of titles II, V, VI of the same regulation. Since the obligation to proceed with the chemical safety assessment is determined by art. 14 Title II of the aforementioned Regulation the substance is exempted from this obligation.

16. OTHER INFORMATION

a) Revisions (clear indication of where the changes were made compared to the previous version).

This is the first draft in accordance with the provisions of Annex ll of the REACH regulation

b) Key to the abbreviations and acronyms used:

ACGIH American Conference of Governmental Industrial Hygienists
ADR European Agreement concerning the International Carriage of Dangerous Good by Road
ASTM America Section of the International Association fot Testing Materials
BCF Bioconcentration Factor
CER European Waste Code DNEL Derived Non-Effective Minimal Level
DMEL Derived Minimal Effect Leve)
EC50 Effect Concentration 50% of the sample
IATA DGR International Air Transport Association Dangerous Good Regulations
IMDG Code International Maritime Dangerous Code
PAH polycyclic aromatic hydrocarbons
LC50 Lethal concentration 50% of the sample
n.a. Not applicable
n.d. Not available
NIOSH National Istitute for Occupational Safety and Health
NOAEC Concentration without observed effects
ONU United Nations Organization
OSHA Occupational Safety and Health Administration
PBT Persistent, Biofumulated and Toxic Substance
ELT End of life Tire
PNEC Expected Concentration of Non-Effect
PNOC Classifiable Non-Food Particles
RID Regulations concerning the International Carriage of Dangerous Goods by Rail
STOT RE Specific target organ toxicity - Repeated exposure
STOT SE Specific target organ toxicity - Single exposure
TLV Threshold Limit Values
TWA Time Weighted Average

UNVC Substance with unknown or variable composition, products of complex reactions or biological materials
vPvB Persistent and Bioaccumulative motion

c) Main biological references and data sources:

Limit threshold values: Italian Jurnal of Occupational and Enviromental Hygiene - year 2010
IUCLID data set REACH Registration dossiers - European Chemicals Agency (ECHA) - year 2012

e) List of relevant H phrases: None.