Safety Data Sheet

1. Identification of the substance / preparation and the Company

1.1 Identification of the substance or preparation

Code:	XL1--007100
Product name	Oro Limone Metallorganic compound for 3rd. fire.

1.2 Use of the substance / preparation

Intended use	third firing decoration in the glass/ceramics/porcelain sectors

1.3 Company identification

Name	COLOROBBIA S.P.A.
Full address	Via A. Gramsci 14
District and Country	50056 Montelupo Fiorentino FI Italia
	Tel. +39 0571 70 81
	Fax +39 0571 708.800
e-mail address of the competent person responsible for the Safety Data Sheet	ambientemsds@colorobbia.it

Product distribution by

1.4 Emergency telephone

For urgent inquiries refer to	+39 0571 709.565

2. Hazards Identification.

2.1 Substance/Preparation Classification.

This product is dangerous under 67/548/EEC and 1999/45/EC directives and subsequent amendments. Therefore, this product requires a safety data sheet according to the Regulation (EC) 1907/2006 and subsequent amendments. Further information on health and/or environmental hazards can be found in sections 11 and 12 of this sheet.

Danger Symbols: Xn-N

R phrases: 10-43-51/53-65

2.2 Danger Identification.

Because of its chemical-physical features, this product is graded as flammable (flash-point 21 °C or higher and 55 °C or lower).
MAY CAUSE SENSITIZATION BY SKIN CONTACT.
TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.

HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED.

3. Composition / Information on ingredients.

Contains:

Name.		Concentration C.	Classification.	
Citronella Oil, Java		1<= C <5	Xn	R 65
C.A.S. number	8000-29-1			
Decahydronaphthalene		1<= C <5		R 10
C.A.S. number	91-17-8		Xn	R 20
EEC number	202-046-9			
Eucalyptus Oil		5<= C <9		R 10
C.A.S. number	8000-48-4			
NAPHTA (PETROL.) HYDRODESULFURIZED HEAVY		0,5<= C <1		R 10
C.A.S. number	64742-82-1			R 66
EEC number	265-185-4			R 67
INDEX number	649-330-00-2		Xn	R 65
			N	R 51/53
				Note H P 4
TURPENTINE		5<= C <9		R 10
C.A.S. number	8006-64-2		Xn	R 20/21/22
EEC number	232-350-7		Xn	R 65
INDEX number	650-002-00-6		Xi	R 36/38
			Xi	R 43
			N	R 51/53
				Note 4
(R)-P-MENTHA-1,8-DIENE		0,5<= C <1		R 10
C.A.S. number	5989-27-5		Xi	R 38
EEC number	227-813-5		Xi	R 43
INDEX number	601-029-00-7		N	R 50/53
				Note C
CYCLOHEXANE		2,5<= C <5		R 67
C.A.S. number	110-82-7		F	R 11
EEC number	203-806-2		Xn	R 65
INDEX number	601-017-00-1		Xi	R 38
			N	R 50/53
				Note 4
TOLUENE		1<= C <5		R 67
C.A.S. number	108-88-3		F	R 11
EEC number	203-625-9		Xn	R 48/20
INDEX number	601-021-00-3		Xn	R 63
				Repr. Cat. 3
			Xn	R 65
			Xi	R 38
				Note 4
DIPENTENE		0,5<= C <1		R 10
C.A.S. number	138-86-3		Xi	R 38
EEC number	205-341-0		Xi	R 43
INDEX number	601-029-00-7		N	R 50/53
				Note C
CYCLOHEXANOL		1<= C <5	Xn	R 20/22
C.A.S. number	108-93-0		Xi	R 37/38
EEC number	203-630-6			
INDEX number	603-009-00-3			
4-METHYLPENTAN-2-ONE		1<= C <5		R 66
C.A.S. number	108-10-1		F	R 11
EEC number	203-550-1		Xn	R 20
INDEX number	606-004-00-4		Xi	R 36/37

The complete text of -R- phrases is specified in section 16.

4. First aid measures.

EYES: Irrigate copiously with clean, fresh water for at least 15 minutes. Seek medical advice.
SKIN: Wash immediately with plenty of water. Remove contaminated clothing. If irritation persists, seek medical attention. Wash contaminated clothing before using them again.
INHALATION: Remove to open air. If breathing is irregular, seek medical advice.
INGESTION: Obtain immediate medical attention. Induce vomiting only if indicated by the doctor. Never give anything by mouth to an unconscious person.

5. Fire-fighting measures.

Closed containers exposed to the heat of a fire may lead to pressure rise and explode. For information on environmental and health risks, protection of the respiratory airways, ventilation and individual protective measures, refer to the other sections of this sheet.
Extinguishing measures: CO2, foam, chemical powder for flammable liquids. Water may not be effective to extinguish the fire, nevertheless it should be used to cool the containers exposed to flames and prevent fires and explosions. For leakage and spillage that have not caught fire, nebulized water may be used to disperse the flammable vapours and protect the people involved in stopping the leakage.
Equipment: wear equipment complete with helmet and face shield and protection of the neck, selfbreathing apparatus at pressure or demand, insulative jacket and trousers, with bands around the arms, legs and waist.

6. Accidental release measures.

PERSONAL PRECAUTIONS
Eliminate all sources of ignition (cigarettes, flames, sparks, etc.) from the leakage site. If there are no contraindications, spray solid products with water to prevent the formation of dust. Use breathing equipment if fumes or powders are released into the air. Block the leakage if there is no hazard. Do not handle damaged containers or the leaked product before donning appropriate protective gear. For information on risks for the environmental and health, respiratory tract protection, ventilation and personal protection equipment, see the other sections of this sheet.
ENVIRONMENTAL PRECAUTIONS
The product must not penetrate the sewers, surface water, ground water and neighbouring areas.
METHODS FOR CLEANING UP
Use inert absorbent material (sand, vermiculite, diatomeous earth, Kieselguhr, etc.) to soak up leaked product. Collect the majority of the remaining material and deposit it in containers for disposal. If there are no contraindications, use jets of water to eliminate product residues. Make sure the leakage site is well aired. Contaminated material should be disposed of in compliance with the provisions set forth in point 13.

7. Handling and storage.

Store in a well ventilated place, keeping the containers closed when not used. Do not smoke while handling. Keep far away from sources of heat, naked flames and sparks and other sources of ignition.

8. Exposure control / personal protection.

8.1 Exposure limit values.

Name	Type	Country	TWA/8h		STEL/15min	
			mg/m3	ppm	mg/m3	ppm
Decahydronaphthalene	TLV-ACGIH		100			

NAPHTA (PETROL.) HYDRODESULFURIZED HEAVY	TLV-ACGIH		575				
TURPENTINE	TLV-ACGIH		111				Skin
	OEL	IRL		100		150	Skin
	WEL	UK		100		150	Skin
CYCLOHEXANE	TLV-ACGIH		344				
	OEL	EU	700	200			
	OEL	IRL		100		300	
	WEL	UK		100		300	
TOLUENE	TLV-ACGIH		188				Skin
	OEL	EU	192	50	384	100	Skin
	OEL	IRL		50		150	Skin
	WEL	UK		50		150	Skin
CYCLOHEXANOL	TLV-ACGIH		206				Skin
	OEL	IRL		50			Skin
	WEL	UK		50			Skin
4-METHYLPENTAN-2-ONE	TLV-ACGIH		205		307		Skin
	OEL	EU	83	20	208	50	Skin
	OEL	IRL		20		50	Skin
	WEL	UK		50		100	Skin

8.2 Exposure controls.

As the use of adequate technical equipment must always take priority over personal protection equipment, make sure that the workplace is well aired through effective local aspiration or bad air vent. If such operations do not make it possible to keep the concentration of the product below the permitted workplace exposure thresholds a suitable respiratory tract protection must be used. See product label for hazard details during use. Ask your chemical substance suppliers for advice when choosing personal protection equipment. Personal protection equipment must comply with the rules in force indicated below.

RESPIRATORY PROTECTION.

If workplace maximum concentration thresholds are exceeded, wear a facemask covering the nose and mouth (see standard EN 141).For high concentrations in the workplace or in the case of an emergency, when exposure levels are unknown, wear an open circuit compressed air self-respirator (see standard EN 137) or an external air intake respirator with mask, partial mask or snorkel (see standard EN 138).

HAND PROTECTION.

Protect hands using Laminate LCT Film work gloves.We recommend applying protective hand cream.The following should be considered when choosing work glove material: degradation, breakage times and permeation. Work glove resistance to preparations should be checked before use, as it can be unpredictable. Gloves' limit depends on the duration of exposure.

EYE PROTECTION.

Wear sealed protective goggles with side shields (see standard EN 166).

SKIN PROTECTION.

Wear overalls with long sleeves and professional safety footwear (see standard EN 344).Wash with soap and water after removing protective clothing. Wash clothing before reuse.

9. Physical and chemical properties.

Odour	characteristic
Appearance	liquid
Solubility	insoluble in water
Viscosity	Not available.
Vapour density	Not available.
Evaporation Rate	Not available.
Reactive Properties	Not available.
Partition coefficient: n-octanol/water	Not available.
pH.	Not available.
Boiling point.	Not available.
Flash point.	26 - 31 °C.
Explosive properties.	Not available.
Vapour pressure.	Not available.
Specific gravity.	Not available.

10. Stability and reactivity.

The product is stable in normal conditions of use and storage. When heated or in the event of a fire, carbonoxides may be released and vapours which are dangerous to health. The vapours may also form explosive mixtures with the air.

Mineral white spirits (oil of turpentine) reacts violently with strong oxidizing agents and chlorine. May ignite on contact with stannic chloride; it dissolves rubber.
Although it is very stable, cyclohexane, may react violently with strong oxidizing agents. Incompatible materials:
butyl and natural rubber, neoprene, PVC, polyethylene.
Toluene is biodegradable in water and degrades when exposed to sunlight. Toluene reacts with sulfuric acid with the development of heat.
Cyclohexanol may react violently with strong oxidizing agents.
Like MEK, methylisobutyl ketone reacts violently with light metals such as, aluminium and strong oxidizing agents; it attacks different types of plastic materials (ref. H.C.S.).

11. Toxicological information.

Upon contact with skin, this product causes sensitization (dermatitis). Dermatitis derives from skin irritation on the areas which repeatedly come into contact with the sensitizing agent. Cutaneous lesions may include: erythemas, edemas, papules, vesicles, pustules, scurvies, ulcerations and exudative phenomena, whose intensity varies according to illness seriousness and affected areas. Erythemas, edemas and exudative phenomena prevail during the acute phase.
Scurfy skin, dryness, ulcerations and skin thickening prevail during the chronic phase.
The introduction of even small quantities of this liquid into the respiratory system in case of ingestion or vomit may cause bronchopneumonia and pulmonary edema.

Cyclohexane: irritant to the skin and mucous membranes; may be absorbed by the skin; neurolesive actions may occur at high doses and to a great extent is due to its metabolite, cyclohexanone.
Toluene: it has a toxic effect on the central and peripheral nervous system (with encephalopathies and polyneuritis).
Irritating to the skin, conjunctivae, cornea and respiratory apparatus.
Methyl isobutyl ketone: tests on volunteers seem to reveal that the threshold of irritation for 15' of exposure is 200 ppm (800 mg/cu.m).
The threshold limit for 15' is 307 mg/cu.m according to ACGIH. For prolonged exposures the most frequent symptoms are neurological, gastrointestinal, respiratory and skin dryness.

Turpentine: oral rat LD50 = 5760 mg/kg inhalation rat LD50 = 3950 ppm/1 hour 2150 ppm/6 hours.

12. Ecological information.

This product is dangerous for the environment and is toxic for aquatic organisms. In the long term, it may even have negative effects on acquatic environment.
Petroleum distillates, charcoal, vegetable extracts: they are mixtures of paraffinic, naphthenic, diterpenic and aromatic hydrocarbons. Their behaviour on the environment depends on the concentration. In each case use, according to good working practices, avoiding disposal in the environment. As a rule, the product is poorly biodegradable.

(R)-P-MENTHA-1,8-DIENE
EC50 (48h): 69,6 mg/l/48h Daphnia pulex
LC50 (96h): 35 mg/l/96h Oncorhynchus mykiss

CYCLOHEXANE
EC50 (48h): 3,89 mg/l/48h Daphnia magna
IC50 (72h): 32,7 mg/l/72h Chlorella vulgaris
LC50 (96h): 4,53 mg/l/96h Pimephales promelas

log P = 4,57
LC50 966 ppm/96 hours = (Pimephales promelas).
EC50 (48h): 17 mg/l/48h Daphnia magna
LC50 (96h): 80 mg/l/96h Oncorhynchus mykiss

13. Disposal consideration.

Reuse, when possible. Product residues should be considered special hazardous waste. The hazard level of waste containing this product should be evaluated according to applicable regulations.
Disposal must be performed through an authorised waste management firm, in compliance with national and local regulations.
Waste transportation may be subject to ADR restrictions.
CONTAMINATED PACKAGING
Contaminated packaging must be recovered or disposed of in compliance with national waste management regulations.

14. Transport information.

These goods must be transported by vehicles authorized to the carriage of dangerous goods according to the provisions set out in the current edition of the Code of International Carriage of Dangerous Goods by Road (ADR) and in all the applicable national regulations.
These goods must be packed in their original packagings or in packagings made of materials resistant to their content and not reacting dangerously with it. People loading and unloading dangerous goods must be trained on all the risks deriving from these substances and on all actions that must be taken in case of emergency situations.

Road and rail transport:

ADR/RID:	3	UN:	1263
Packing Group:	III		
Label:	3		
Nr. Kemler:	30		
Proper Shipping Name:	Paint or paint related material		
Special Provision:	640E		

Carriage by sea (shipping):

IMO class:	3	UN:	1263
Packing Group:	III		
Label:	3		
EMS:	F-E	S-E	
Proper Shipping Name:	Paint or paint related material		

Transport by air:

IATA:	3	UN:	1263
Packing Group:	III		
Label:	3		
Cargo:			
Packaging instructions:	310	Maximum quantity:	220 L
Pass.:			
Packaging instructions:	309	Maximum quantity:	60 L

15. Regulatory information.

Xn

HARMFUL

N

DANGEROUS FOR THE ENVIRONMENT

R 10	FLAMMABLE.
R 43	MAY CAUSE SENSITIZATION BY SKIN CONTACT.
R 51/53	TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.
R 65	HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED.

S 24	AVOID CONTACT WITH SKIN.
S 29	DO NOT EMPTY INTO DRAINS.
S 37	WEAR SUITABLE GLOVES.
S 43	IN CASE OF FIRE, USE SUITABLE FIRE-FIGHTING EQUIPMENT.
S 61	AVOID RELEASE TO THE ENVIRONMENT. REFER TO SPECIAL INSTRUCTIONS/SAFETY DATA SHEETS.
S 62	IF SWALLOWED, DO NOT INDUCE VOMITING: SEEK MEDICAL ADVICE IMMEDIATELY AND SHOW THIS CONTAINER OR LABEL.

Contains: TURPENTINE

Danger labelling under directives 67/548/EEC and 1999/45/EC and following amendments and adjustments.

Workers exposed to this chemical agent must undergo health checks according to regulation 98/24/EC.

16. Other information.

Text of -R- phrases quoted in section 3 of the sheet.

R 10	FLAMMABLE.
R 11	HIGHLY FLAMMABLE.
R 20	HARMFUL BY INHALATION.
R 20/21/22	HARMFUL BY INHALATION, IN CONTACT WITH SKIN AND IF SWALLOWED.
R 20/22	HARMFUL BY INHALATION AND IF SWALLOWED.

R 36/37	IRRITATING TO EYES AND RESPIRATORY SYSTEM.
R 36/38	IRRITATING TO EYES AND SKIN.
R 37/38	IRRITATING TO RESPIRATORY SYSTEM AND SKIN.
R 38	IRRITATING TO SKIN.
R 43	MAY CAUSE SENSITIZATION BY SKIN CONTACT.
R 48/20	HARMFUL: DANGER OF SERIOUS DAMAGE TO HEALTH BY PROLONGED EXPOSURE THROUGH INHALATION.
R 50/53	VERY TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.
R 51/53	TOXIC TO AQUATIC ORGANISMS, MAY CAUSE LONG-TERM ADVERSE EFFECTS IN THE AQUATIC ENVIRONMENT.
R 63	POSSIBLE RISK OF HARM TO THE UNBORN CHILD.
R 65	HARMFUL: MAY CAUSE LUNG DAMAGE IF SWALLOWED.
R 66	REPEATED EXPOSURE MAY CAUSE SKIN DRYNESS OR CRACKING.
R 67	VAPOURS MAY CAUSE DROWSINESS AND DIZZINESS.

GENERAL BIBLIOGRAPHY

1. Directive 1999/45/EC and following amendments;
2. Directive 67/548/EEC and following amendments and adjustments (technical adjustment XXIX);
3. Regulation (EC) 1907/2006 (REACH) of the European Parliament;
4. The Merck Index. - 10th Edition;
5. Handling Chemical Safety;
6. Niosh - Registry of Toxic Effects of Chemical Substances;
7. INRS - Fiche Toxicologique (toxicological sheet);
8. Patty - Industrial Hygiene and Toxicology;
9. N.I. Sax - Dangerous properties of Industrial Materials-7, 1989 Edition;

Note for users:

The information contained in the present sheet are based on our own knowledge on the date of the last version. Users must verify the suitability and thoroughness of provided information according to each specific use of the product .

This document must not be regarded as a guarantee on any specific product property.

The use of this product is not subject to our direct control; therefore, users must, under their own responsibility, comply with the current health and safety laws and regulations. The producer is relieved from any liability arising from improper uses.

Changes to previous review.

The following sections were modified:

08