

TECHNICAL DATA SHEET

PRODUCT

Class	Two-Component Cold Road Marking Paint
Application Mode	Flat

PRODUCT DESCRIPTION

It is a two-component, Methyl Methacrylate-based white road marking paint with excellent reflectivity. It has been formulated to meet the requirements of the TCK General Directorate highways technical specifications, TS EN 1871 and TS EN 1436 standards.

It is a product with very high physical and chemical resistance, which hardens as a result of the chemical reaction that occurs by mixing its components in certain proportions and adheres to the surface it is applied to.

Thanks to its high strength, it maintains its reflective power, color and film thickness under heavy traffic. It is absolutely unaffected by chemicals used against icing on the roads, oil and fuel falling from vehicles. Its lifespan varies between 24 and 48 months, depending on the structure of the road and the traffic density on it.

It is used to make safety and warning markings on the roads, to draw pedestrian crossings and deceleration lines, to draw shapes and write on the road using templates.

PRODUCT DESCRIPTION

Surface Preparation Information:

Before the application of Emerald, it must be ensured that the surface to be applied is dry, dust-free, free from oil and other dirt. The surface temperature of the road should be above 10 °C. It is recommended to clean the existing paint on the road. However, if the old paint on the surface cannot be easily cleaned, it can be applied on it.

Application Information:

Depending on the air temperature, 1% to 2% hardener is mixed with the paint. After obtaining a homogeneous mixture, it is applied to the surface with the help of suitable equipment. Glass beads are poured on it to increase its reflective effect. Even if the glass beads on the surface disappear over time, it maintains its reflective feature thanks to the glass beads in its structure. 30 minutes at the latest after application. The road is opened to traffic.

After the mixture is prepared, wait 10 minutes at the latest. It must be implemented in.

The product is applied smoothly between 2mm and 5mm without the need for any additives.

Please wear suitable protective clothing, gloves and mask as hot liquid is dangerous for operators during application.

Application conditions	10 °C - 40 °C
Max. Humidity	% 80
Drying Time	30 min. (25 °C and % 49 Humidity)

PAINT AND GLASS BEADS CONSUMPTION AMOUNT

Film Thickness (mm)	Paint Consumption Amount (g/m ²)
1	1940
1,5	2910
2	3880
3	5820
5	9700

Note: The values given in the table are theoretical values. Consumption amounts may vary depending on the surface on which the paint will be applied and environmental conditions.

Glass Beads (TS EN 1423)	Need
	265 g / m ²
	Consumption
	350 g / m ²

PHYSICAL PROPERTIES

Color	White
Viscosity	13 Daniel Flow Gauge
Density [g / ml]	1,94 g / ml. \pm 0,02
Amount of Solids (By Weight) [%]	89 \pm 2
Brightness Factor Class / Value	LF6 / $\beta \geq 0,80$
Antiskid	Class S2 (SRT \geq 50)



STORAGE CONDITIONS

Excellent; Two-component road marking paint is offered to users in 25 Kg metal packages.

Under appropriate storage conditions, stock life is at least 1 year.

Store in closed areas, keep away from sources of fire.

1. IDENTIFICATION OF SUBSTANCE / PREPARATION AND OF THE COMPANY / UNDERTAKING	
1.1. Identification of substance or preparation	
Name	ROADSAN - EXCELLENT
Product Code	RDS6-9003-25
Class	Two-Component Cold Road Marking Paint
1.2. Company / undertaking identification	
Registered company name	ROADSAN BOYA MAKİNA ve TRAFİK TEKNOLOJİLERİ DIŞ TİC. SAN. LTD. ŞTİ.
Address	Ata Mah. 769 Sk. Astis Kooperatifi No:7 A EFELER / AYDIN
Telephone	+90 256 231 10 52
Emergency phone number	+90 554 271 84 66

2. HAZARDS IDENTIFICATION	
2.1. Classification of material or mixture	
Flam. Liq. 2 H225	Highly flammable liquid and vapour.
Skin Irrit. 2 H315	Causes skin irritation.
Skin. Sens. H317	Causes allergic skin reactions.
Acute Tox. 2 H330	May cause respiratory irritation
Acute Tox. 2 H301+H311	May cause drowsiness or dizziness.
BHOT Tek Mrz. 3 H335	May cause damage to organs.
Aquatic Chronic 3 H412	Harmful to aquatic life with long lasting effects.
STOT RE 2 * H373	May cause damage to organs through prolonged or repeated exposure if it is conclusively proven that no other routes of exposure cause the hazard.
Labeling:	 
Warning Word:	DANGEROUS
Hazard Statements:	
H225	Highly flammable liquid and vapour.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause allergic skin reactions.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.
H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.

H412	Harmful to aquatic life with long lasting effects.
Precautionary Statements:	
P210	Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P240	Ground the container and receiving equipment.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+310	IF SWALLOWED: Immediately call a POISON CENTER/doctor/...
P305+351+338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P304+340	IF INHALED: Remove person to fresh air and keep in a position comfortable for breathing.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/ shower.
P403	Store in a well-ventilated place.
P501	Dispose of contents/container to[...] in accordance with local/regional/national/international regulation
Dangerous goods	Metil Metacrylat, 2-Etilheksilakrilat, N,N-Dimetil-P-Toludin

3. COMPOSITION / INFORMATION ON INGREDIENTS

3.1. Hazardous substances present on their own:					
Name	CAS	EC	Symbols	H* Phrases	%
Metil Metacrylat	80-62-6	201-297-1	Flam. Liq. 2 Skin Irrit. 2 Skin Sens. 1 STOT SE 3	H225 H315 H317 H335	10 <= X % < 25
2-Etilheksilakrilat	103-11-7	203-080-7	Flam. Liq. 2 Skin Sens. 1 STOT SE 3	H315 H317 H335	2,5 <= X % < 10
N,N-Dimetil-P-Toludin	99-97-8	202-805-4	Acute Tox. 3* Acute Tox. 2* Acute Tox. 3* STOT SE 2* Aquatic Chronic 3	H301 H330 H311 H373** H412	10 <= X % < 25

4. FIRST AID MEASURES

As a general rule, in case of doubt or symptoms persist, always call a doctor.
Never induce swallowing in an unconscious person.
In the event of exposure by inhalation:
If a large quantity is inhaled, move patient into the fresh air and keep him/her warm and still. If not breathing or if breathing is irregular or airways blocked, have a trained person administer artificial respiration or oxygen. Do not give anything by mouth.
If the person is unconscious, place in the recovery position and call an ambulance.
In the event of splashes or contact with eyes:
Wash thoroughly with soft, clean water for 15 minutes holding the eyelids open.
Refer the patient to an ophthalmologist, in particular if there is any redness, pain or visual impairment.
In the event of splashes or contact with skin:
Remove contaminated clothing and wash the skin thoroughly with soap and water or a recognized

cleaner.
DO NOT use solvent or thinners.
If skin damage occurs at the contact site, consult a doctor or send the patient to the hospital.
In the event of swallowing:
If swallowed accidentally, call a doctor to assess the need for monitoring and subsequent treatment in hospital. Show him the label.
Keep still. DO NOT induce vomiting.

5. FIRE – FIGHTING MEASURES

Chemical powders, carbondioxide and other extinguishing gas are suitable for small fires.
Suitable extinguishing media:
Special foams for polar liquid (known as alcohol resistant), powders, carbon dioxide
In the event of fire, use specifically suitable extinguishing agent.
Extinguishing media which must not be used for safety reasons:
Water is not generally recommended since it can be ineffective; however, it can be used successfully to cool containers exposed to fire and to disperse fumes.
A fire often produces a thick black smoke. Exposure to decomposition products may be hazardous to health.
Do not breathe in smoke.
Prevent an effluent of fire – fighting measures from entering drains or waterways.
Special protective equipment for fire fighters:
Fire-fighting personal are to be equipped with autonomous insulating breathing apparatus.

6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions:
On account of the organic solvents contained in the preparation eliminate the sources of ignition and ventilate premises.
Avoid inhaling the vapors.
Consult the safety measures listed under headings 7 and 8.
If a large quantity has been spilt, evacuate all personnel and only allow intervention by trained operators equipped with safety apparatus.
6.2. Environmental precautions:
Contain and control the leaks or spills with non-combustible absorbent materials such as sand, earth, vermiculite, diatomaceous earth in drums for waste disposal.
Prevent any material entering drains or waterways.
Use drums to dispose of waste recovered in accordance with applicable regulations (see heading 13).
If the product contaminates waterways, rivers or drains alert the relevant authorities in accordance with statutory procedures.
6.3. Methods for cleaning up:
Clean preferably with a detergent, do not use solvents.
6.4. Storage:
Store in dry and well-ventilated indoor areas.
Keep in its original packaging.

Protect from all kinds of fire, heat sources and sunlight. Do not smoke.

7. HANDLING AND STORAGE

The regulations relating to storage premises apply to workshops where the product is handled. Avoid exposure to pregnant women and warn women of child-bearing age of possible risks.

Handling:

Handle in well-ventilated areas.

The vapors are denser than air. They can spread along the ground and form explosive mixture with air.

Prevent the formation of flammable or explosive concentrations higher than the occupational exposure limits.

Fire prevention:

Prevent the accumulation of electrostatic charges with connections to earth.

The preparation may become electrostatically charged; always place on the ground during transfer. Wear antistatic shoes, clothes and make floors of conductive materials.

Use the product in premises where there are no naked flames or other sources of ignition, and there is protected electrical equipment.

Keep packages tightly and away from sources of heat, sparks and naked flames.

Do not use tools which may produce sparks. Do not smoke.

Prevent access by unauthorized personnel.

Recommended equipment and procedure:

For personal safety see section 8.

Observe precautions stated on label and also industrial safety regulations.

Avoid inhaling solvent vapors and spray-gun aerosols.

Avoid exposure – obtain special instructions before use.

Packages which have been opened must be reclosed carefully and stored in an upright position.

Avoid inhaling vapors. Carry out any industrial operation which may give rise to this in a sealed apparatus.

In all cases, recover emissions at source.

Provide vapor extraction at the emission source and also general ventilation of the premises.

Also provide breathing apparatus for certain short tasks of an exceptional nature and for emergency interventions.

Where the personnel must carry out work in a booth, whether for spraying or otherwise, the ventilation may be inadequate to control particles and solvent vapors in every case.

It is therefore recommended that personnel wear masks with a compressed air supply during spraying operations until the concentration of particles and solvent vapors has fallen below the exposure limits.

Prohibited equipment and procedure:

Smoking, eating and drinking are prohibited in premises where the preparation is used.

Never open the packages under pressure.

Storage:

Keep the container tightly closed in a dry, well-ventilated place.

Keep away from all sources of ignition, heat and direct sunlight – do not smoke.

The floor must be impermeable and form a collecting basin so that, in the event of an accidental spillage, the liquid cannot spread beyond this area.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

Use the necessary equipment in accordance with the regulation on the use of personal protective equipment in workplaces.

Technical measures:

Ensure adequate ventilation, if possible with extractor fans at work posts and appropriate general extraction.

Check the atmosphere periodically.

If this ventilation is insufficient to maintain the concentration of vapors below the exposure limits, wear breathing apparatus.

Exposure Limit Values

Related to the workplace limit values that require monitoring components;

Methyl Methacrylate

AU OEL	TWA (8 hours) 50 ppm
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AU OEL	STEL (15 min) 100 ppm
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TLV (USA)	75 mg/m ³ , 20 ppm NIC-BEI
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2-Etilhekzil akrilat

It does not contain any substances with exposure limits.

N,N-Dimetil-P-Toludin

It does not contain any substances with exposure limits.

Respiratory protection:

Where workers encounter concentration higher than exposure limits, they must wear suitable, approved masks.

Hand protection:

Protective creams may be used for exposed skin, but they should not be applied after contact with the product. Glove type: Neoprene or nitrile.

Eye and face protection:

Avoid contact with eyes and skin.

Use eye protectors designed to protect against liquid splashes.

Keep eyewash drops in use areas.

Skin protection:

Wear suitable protective clothing.

Personnel should use anti-static clothing made from natural fibers or heat-resistant clothing made from synthetic fibers.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. General Information

Physical state	Viscous Liquid
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9.2. Important Health, Safety and Environmental Information

PH of the substance or preparation	Not Relevant
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When a PH measure is possible, it has a value of	Not Relevant
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Boiling point / boiling range	Not Specified
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Flash point interval	< = 10 °C
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Vapor pressure	Below 110 kPa (1.1bar)
Density	> 1
Water solubility	Insoluble
9.3. Other Information	
Melting point / melting range	Not Specified
Self-ignition temperature	Not Specified
Decomposition point / decomposition range	Not Specified

10. STABILITY AND REACTIVITY

When exposed to the high temperatures, the preparation may release dangerous decomposition products such as carbon monoxide and dioxide, smoke and nitrogen oxide.

Stable under recommended storage conditions (See section 7).

11. TOXICOLOGICAL INFORMATION

Acute Toxicity:

Methyl Methacrylate

Oral	LD50 – 7.872 mg/kg (rat)
Dermal	LD 50 > 5.000 mg/kg (rabbit)
Inhalation	LC50/4h – 78.000 mg/l; (rat)

2Etilheksilakrilat

Oral	LD50 - 4435 mg/kg (rat)
Dermal	LD50 - 7522 mg/kg (rabbit)

N-N Dimetil-P-toluidin

Oral	LD50 - 139 mg/kg (mouse)
Dermal	LD50 - >2000 mg/kg (rabbit)
Inhalation	LC50/4h - 1,4 mg/l (rat)

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Methyl Methacrylate

Toxicity to fish:	Flow-through test LC50 - Lepomis macrochirus (Bluegill sunfish) - 191 mg/l - 96 h (ECHA) Static test LC50 - Lepomis macrochirus (Bluegill güneş balığı) – 283 mg/l - 96 h (ECHA)
Toxicity to daphnia and other aquatic invertebrates:	Flow-through testi NOEC - Daphnia magna (Water flea) - 48 mg/l - 48h Notlar: (ECHA) Flow-through testi EC50 - Daphnia magna (Water flea) - 69 mg/l - 48 h Notlar: (ECHA)
Toxicity to algae:	Static test EC50 - Pseudokirchneriella subcapitata - > 110 mg/l – 72 h (OECD Test Guideline 201) Static test NOEC - Pseudokirchneriella subcapitata - > 110 mg/l – 72 h (OECD Test Guideline 201)

2-Etilheksilakrilat

Toxicity to fish:	LC50 - Leuciscus idus (Altin orfe) - 23 mg/l - 48 h (2-Etilheksilakrilat) Notlar: (IUCLID) Flow-through test LC50 - Oncorhynchus mykiss (rainbow trout) - 28,5 mg/l - 96 h (Hydroquinone monomethyl ether) (OECD Test Guideline 203)
Toxicity to daphnia and other aquatic invertebrates:	EC50 - Daphnia magna (water flea) - 17 mg/l - 48 h (2-Etilheksilakrilat) (IUCLID)
Toxicity to daphnia and other aquatic invertebrates:	Static test EC50 - Daphnia magna (water flea) - 3 mg/l - 48 h (Hydroquinone monomethyl ether) (OECD Test Guideline 202) Semi-static test NOEC - Daphnia magna (water flea) - 0,68 mg/l - 21 d (Hydroquinone monomethyl ether)
Toxicity to algae:	IC50 - Desmodesmus subspicatus (green moss) - 44 mg/l - 72 h (2-Ethylhexyl-acrylate) (IUCLID)
Toxicity to bacteria:	EC50 - Pseudomonas putida - > 10.000 mg/l - 30 min (2-Ethylhexyl-acrylate) (DIN 38412) (as emulsion) (IUCLID)
N-N Dimetil-P-toluidin	
Toxicity to fish:	LC50 - Pimephales promelas (baby carp) - 46 mg/l - 96 h Notlar: (ECOTOX Database)
12.2. Persistence and Degradability	
Methyl Methacrylate	
Biodegradability:	Aerobic - Exposure time 14 d Result: 94 % - Readily biodegradable. (OECD Test Guideline 301C)
Biochemical Oxygen Demand (BOD):	140 mg/g
2-Etilheksilakrilat	
Biodegradability:	Aerobic - Exposure time 28 d Result: 75 % - Readily biodegradable. (OECD Test Guideline 301C) (Hydroquinone monomethyl ether)
12.3. Bioaccumulative Potential	
No data available	
12.4. Mobility in Soil	
No data available	
12.5. Mobility in soil	
No data available	
12.6. Results of PBT and vPvB assessment	
This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.	
12.7. Endocrine disrupting properties Product:	
No data available	
12.8. Other Negative Factors	
Discharge into the environment should be prevented.	

13. DISPOSAL CONSIDERATIONS

Do not pour into wastewater or waterways.

Product Waste:

Waste must be disposed of in accordance with federal, state and local environmental control regulations.

Do not pollute the ground and water resources with waste, and do not throw waste into the environment.


Packaging Waste:

Empty the packaging completely.

Give packaging waste to licensed organizations in accordance with the hazardous chemicals disposal regulations.

14. TRANSPORT INFORMATION

Always carry it upright and securely in closed packages. Inform people handling this product about what to do in case of accident or spillage.

UN:	1263 - PAINT						
ADR/RID	Class Code	Pack.Gr.	Label	Ident.	LQ	Provis.	
	3	III	3	33	LQ7	163 640 650H	
IMDG	Class Code	Pack.Gr.	LQ	EMS	Provis.		
	3	III	5L	F-E, S-E	163 223 944 955		
IATA	Class Code	Pack.Gr.	Pass.	Pass.	Cargo	Cargo	Not
	3	III	309	60 L	310	220 L	A3 A72
	3	III	Y309	10 L	-	-	-

15. REGULATORY INFORMATION

This Safety Data Sheet is prepared for according to Dangerous Substances and Mixtures Safety Data Sheets regulation.

This product is classified in accordance with the Regulation on Classification, Packaging and Labeling of Dangerous Substances and Preparations (RG: 26.12.2008, 27092 Mük.) and/or the Regulation on Classification, Labeling and Packaging of Substances and Mixtures (RG: 11.12.2013, 28848 Mük.). (see 2. HAZARDS IDENTIFICATION for the applicable Classification and Labeling regulation).

16. OTHER INFORMATION

The information provided in this Safety Data Sheet should be evaluated in line with the instructions given by the manufacturer regarding the use of the product. The risks that may arise from using this product for other purposes, mixing it with other substances or using it in other processes belong to the user.

H225	Highly flammable liquid and vapour.
H311	Toxic in contact with skin.
H315	Causes skin irritation.
H317	May cause allergic skin reactions.
H319	Causes serious eye irritation.
H330	Fatal if inhaled.

H335	May cause respiratory irritation.
H373	May cause damage to organs through prolonged or repeated exposure.
H412	Harmful to aquatic life with long lasting effects.

Prepared by person(s) who is certified according to the regulation.

Certification Number: TÜV/11.174.06 | Effective Date: 05.12.2022 | Expiry Date: 05.12.2027

This Safety Data Sheet has been established in accordance with the applicable European Directives and applies to all countries that have translated the Directives in their national laws.

This information is based on our present state of knowledge. It should not therefore be construed as guaranteeing specific properties of the products described or their suitability for a particular application. Changes compared to the previous version are marked before the section number!