
Product	RESIDUAL MARINE FUELS	Date:	2020/4/7
		Edition:	6

1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1. Product identifier

- Trade name: RESIDUAL MARINE FUELS
 - F RMA 10
 - F RMB 30
 - F RMD 80
 - F RME 180(<0,5%S)**
 - F RME 180
 - F RMG 180
 - F RMG 380
 - F RMG 500
 - F RMG 700
 - F RMK 380
 - F RMK 500**
 - F RMK 700** (Fuel Oil, Fuel Oil HS)
- Chemical name: Fuel oil, residual
- Index no.: 649-024-00-9
- EC no.: 270-675-6
- CAS no.: 68476-33-5
- Registration No.: 01-2119474894-22-0087
- Product code: **1002613, 1002605, 1000626**

1.2. Relevant identified uses of the substance or mixture and uses advised against

- Relevant identified uses: **Industrial:** Manufacture of Substances, Formulation & (Re)Packing of substances, Use as intermediate, Use as a fuel
Professional, Consumer: Use as a fuel
- Uses advised against: **Professional:** Use in coatings, Use in road and construction applications

1.3. Details of the supplier of the safety data sheet

- Manufacturer/supplier: **INA-Industrija nafte, d.d.**

Address: Av. Većeslava Holjevcica 10
pp 555, 10002 Zagreb, HRVATSKA

Phone: 00-385-1-6450-842 / 00-385-1-6451-075 (24 h)

Fax: 00-385-1-6452-050

e-mail:

sds@ina.hr

- Responsible person:

SD & HSE

Mirela Mavrinac, B.Sc.

Tel. 00-385-1-6450-803

Hrvoje Raukar, B.Sc.

1.4. Emergency Telephone Number

- Emergency Service Telephone Number: **112**

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National Protection and Rescue Directorate	00-385-1-3650-011
Nehajska 5, 10000 Zagreb	00-385-1-3650-084
e-mail: info@duzs.hr	00-385-1-3650-082
	00-385-1-3650-083

- Medical Information Telephone Number: 00-385-1-23-48-342

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

2.1.1. Classification according to Regulation (EC) No 1272/2008 (CLP/GHS):

Acute Tox. 4; H332

Repr. 2; H361

Carc. 1B; H350

STOT Rep. Exp.2; H373

Aq. Acute Chronic1; H400

Aquatic Chronic1; H410

Full text of H-phrases: see section 16.

2.2. Label elements

2.2.1. Labelling according to Regulation (EC) No 1272/2008 (CLP/GHS)

Hazard pictograms:



GHS07



GHS08



GHS09

Signal word: Danger

Hazard statements (H):	H332	Harmful if inhaled.
	H350	May cause cancer by inhalation.
	H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
	H373	May cause damage to organs through prolonged or repeated exposure through prolonged or repeated exposure.
	H410	Very toxic to aquatic life with long lasting effects.
	EUH066	Repeated exposure may cause skin dryness or cracking.
Precautionary statements (P):	P201	Obtain special instructions before use.
	P260	Do not breathe dust/fume/ gas/mist/vapours/spray.

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- P273 Avoid release to the environment.
- P280 Wear protective gloves/protective clothing/eye protection/face protection.
- P308+
P313 IF exposed or concerned: Get medical advice/ attention.
- P501 Dispose of contents/container in accordance with national regulations.

2.3. Other hazards

No data.

3. COMPOSITION / INFORMATION ON INGREDIENTS

-Substance:	X				Mixture:		
- Components contributing to product hazardousness:							
Substance name	Substance identification			[%]	Classification according to Regulation (EC) No 1272/2008 (CLP/GHS)		
	CAS no.	EC no.	Registration no. (REACH)				
Residual marine fuels	68476-33-5	270-675-6	01-2119474894-22-0087	≤100	Acute Tox. 4; H332 Repr. 2; H361 Carc. 1B; H350 STOT Rep. Exp.2; H373 Aq. Acute Chronic1; H400 Aquatic Chronic1; H410		

4. FIRST AID MEASURES

4.1 Description of first aid measures

- general information: Repeated exposure can cause skin drying and cracking. If product is stored and handled at increased temperatures, there is a potential danger of hydrogen sulfide. In such case, excessive exposure can cause irritation of respiratory system, nausea, dizziness and death.
- after inhalation: Afflicted person shall be brought to fresh air and observe breathing. In case of headache, dizziness, nausea and permanent complaints immediately seek medical attention. In case of fainting transport in lateral position to hospital, paying attention to the free passing of the air thorough the respiratory tract. If the person is breathing with difficulty or not at all, administer CPR (heart massage and artificial respiration) and immediately seek medical assistance.
- after skin contact: Take the soaked clothing and footwear off, rinse thoroughly the places of contact with water and soap for at least 10-15 minutes. In case of swelling, redness or itchiness, seek medical assistance.

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- after eye contact: Remove contact lenses and flush the eyes with running water for at least 15 minutes. In case of irritation, blurred vision and swelling immediately seek medical attention.
- after ingestion: DO NOT invoke vomiting! Do not give anything by mouth. Always assume aspiration into the lungs has occurred. If vomiting occurs, keep the head below the level of hips in order to prevent penetration into the lungs. Immediately seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

- after inhalation: Prolonged inhalation can cause sense of intoxication, headache, nausea, dizziness.
- after skin contact: Skin redness.
- after eye contact: Can cause redness.
- after ingestion: Risk of pulmonary edema.

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically. Only qualified medical personnel should administer oxygen.

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

- SUITABLE: Air foam, CO₂ powder, water mist, auxiliary means.
- UNSUITABLE: Water jet.

- Firefighting measures for special hazards: Remove all ignition sources, if required call for firemen. Pay special attention to finding out whether there is a risk of explosive-air mixture formation at temperatures above the flash point. Substance floats on water and can ignite again.

- Special firefighting measures: Use water mist and water spray for cooling the surfaces exposed to heat and for protection of persons. Only those who are trained in fire protection/fire-fighting may use water spray (sprayed/dispersed water).

- Special fire fighter protective equipment: Wear protective clothing for firefighters (intervention suit) in accordance with HRN EN 469 and a self-contained open-circuit compressed air breathing apparatus in accordance with HRN EN 137.

5.2 Special hazards arising from the substance or mixture: Vapours are heavier than air and may settle to ground level and in dents; they may spread away from the site of accident and cause explosion and fire. When firefighting with water in tanks – danger of boiling and formation of overpressure. Fumes can be explosive when mixed with air. Controlled release in sewage – danger of explosion.

5.3 Advice for firefighters: Smaller fires are extinguished by auxiliary means, e.g. (dry) sand or earth. Incautious affusion of hot material with water can be extremely dangerous!

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6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures:

Ventilate thoroughly the premises at risk. Display a visible sign prohibiting entrance, use of open flame and sparking devices. Do not inhale foams, evaporations. Do not smoke. Stand upwind from the spill site. Use means of personal protection mentioned under Item 8.

6.2 Environmental precautions:

Mark out the contaminated area with signs and prevent leaks and spills into watercourses, canals, drainage systems and soil by digging a protective ditch, setting up partitions made of bags of dry sand, soil or clay. Ensure good ventilation. In case of major spills notify the communication unit by dialing 112.

6.3 Methods for cleaning-up and recovery:

Pump the product from the damaged tank into an empty tank - container with the pump designed for use in potentially explosive atmosphere. Absorb the remainders with absorbents (sawdust, sand, mineral adsorbents and other inert materials). Store the waste material and contaminated surface layer of soil that was removed in closed containers in well-ventilated premises. Hand over for disposal to legal entities for hazardous waste disposal, authorised by the Ministry in charge of environmental protection.

- Additional warnings:

For the purpose of protecting the local sea zone and port infrastructure from pollution, ships have to be surrounded with a safety barrier. In case of major spills notify Port Authorities and Emergency Service by dialing 112.

6.4 Reference to other sections:

See items 8 and 13.

7. HANDLING AND STORAGE

- Handling

7.1 Precautions for safe handling

7.1.1 Safe handling advice:

Check the level of hydrogen sulfide (H₂S) before entering the confined space in which the product is stored. The vapours are heavier than air, product build-up near the floor of the storage space is possible. Handle the product in well-ventilated areas. Keep away from sources of heat and ignition. Never check the level in the tank near open flames, sparks or smoke. Adhere to occupational health and safety and fire protection measures.

7.1.2 Advice on general occupational hygiene:

Do not smoke. Avoid inhalation of vapours, as well as contact with skin and eyes. Apply personal safety equipment from item 8.

7.2 Conditions for safe storage, including any incompatibilities

- SUITABLE:

Properly constructed and equipped tanks. Storage tanks in ships have to be kept in a cold and well vented room.

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- TO BE AVOIDED: Everything else.
- **Packaging materials**
- RECOMMENDED: Prescribed for the purpose.
- NOT SUITABLE: No data.
- 7.3 Specific end use(s):** No data.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Hazardous substance (CAS No.)	Occupational exposure limit values/short term values (OEL/STEL)		Biological limit values
	ppm	mg/m ³	
Hydrogen sulfide (7783-06-4)	5/10	7/14	No data.

- Monitoring procedures:

8.2. Exposure controls

- **Summary of risk management measures:** Provide a good ventilation / air outlet in the work area.

8.2.1 Occupational exposure controls

- Description of operating procedure and technological control:

Make sure work areas are well-ventilated with air outlet. Adopt personal hygiene measures: wash hands after contact with the product, especially before eating, drinking and/or smoking. Regularly maintain and wash the clothing and equipment after use to remove dirt. Properly dispose of the contaminated clothing and equipment. Maintain cleanliness in accordance with good practice. Educate the employees on the hazards and control measures. Test and maintain the equipment used when handling the product: for example, personal protective equipment, and ventilation system.

8.2.2 Personal protective equipment

- respiratory tract protection: Protective full face mask (HRN EN 136/AC) with a combined filter type A2P3 and threaded connection complying with the HRN EN 14387 and HRN EN 143/A1 standards. In case of fire, use a self-sustained open-circuit compressed-air breathing apparatus (HRN EN 137).
- hand protection: Safety gloves made of a resistant, impermeable material, such as nitrile rubber or viton (HRN EN 374).
- eye protection: Safety goggles with side guards or vizier (HRN EN 166) for lower concentrations, and safety mask for higher concentrations.
- skin and body protection: Safety clothing and footwear, nitrile rubber apron, chemical safety suit.

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- Special hygienic and safety precautions:

Maintain the regular hygiene standards prescribed for working with hazardous substances. Take-off the contaminated clothes and footwear. Regularly check and maintain the equipment/accessories and devices by washing with running water. Smoking prohibited during handling this product, as well as eating and drinking. After each interruption of work, obligatory hand washing.

8.2.3 Environmental exposure controls

- Summary of risk management measures: No data.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

- state:		Viscous liquid to solid at 20°C and 101,325 kPa
- colour:		Brown – black to black
- odour:		Characteristic, after asphaltenes
- odour threshold:		No data.
- pH value (indicate conc. and temp.):		Not applicable
- Melting point/freezing point:	°C	Not applicable.
- boiling point/boiling range:	°C	>150
- flash point:	°C	≥60
- Evaporation rate:		No data.
- flammability (solid, gas):		No data.
- explosive limits:	vol. %	No data.
- vapour pressure:	kPa	No data.
- vapour density at 15°C:	kg/m ³	Not applicable.
- relative density:		Not applicable.
- density at 15°C:	kg/m ³	920 – 1010
- solubility (indicate solvent):	g/L	Not applicable.
- Solubility in water:	g/L	Not applicable.
- partition coefficient n-octanol / water	logPow	Not applicable.
- auto ignition temperature:	°C	220 – 550 (from literature)
- disintegration temperature:	°C	No data.
- viscosity (kinematic) at 50 °C:	mm ² /s	10,00* – 700,0
- oxidizing properties:		Not applicable.
- conductivity:	pS/m	No data.

*viscosity (kinematic) at 50°C for F RME 180(<0,5%S) is 45,6 mm²/s – 178,5 mm²/s (≤180).

9.2 Other information:

No data.

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10. STABILITY AND REACTIVITY

10.1 Reactivity:	Stable at the prescribed conditions of use and storage.
10.2 Chemical stability:	Stable at the prescribed conditions of use and storage.
10.3 Possibility of hazardous reactions:	Potentially dangerous reactions are not known.
10.4 Conditions to avoid:	Contact with air, strong oxidants, and increased temperature.
10.5 Incompatible materials:	Strong oxidants.
10.6 Hazardous decomposition products:	Incomplete combustion produces a mixture of solid and liquid particles and gases, including carbon monoxide (CO), hydrogen sulfide (H ₂ S), sulfur oxides (SO _x).

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects:

- Acute toxicity

- oral (LD₅₀): > 5000 mg/kg body weight (rat).
- inhalation (LC₅₀): 4,1 mg/L (rat).
- dermal (LD₅₀): > 2000 mg/kg body weight (rabbit).

- Irritation/Corrosion

- skin: Repeated exposure may cause skin dryness or cracking (EUH066).
- eyes: Irritating effect possibly accompanied by redness.
- respiratory tract: Harmful if inhaled (H332).

- Sensitisation

- skin: Does not cause sensitization.
- respiratory tract: No data available.

- Aspiration hazard: No data available.

- Other classic effects: (e.g. unconsciousness, particularly toxic metabolites, etc.): No data available.

- Permanent effects due to acute or chronic exposure: No data available.

- Special effects

- mutagenicity: Not mutagenic.
- carcinogenicity: May cause cancer. (H350)
- fertility decrease: No data.
- harmful effect on unborn child: No data.
- toxicity to reproduction: Suspected of damaging the unborn child. (H361d)

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- other (e.g. endocrine disruptors): No data available.
- STOT (SE): No data available.
- STOT (RE): May cause damage to organs through prolonged or repeated exposure. (H373)
- **Prohibitions and restrictions:** No data available.
- **Other:** No data available.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

- to aquatic organisms: EL₅₀ 48h (Daphnia magna) = 0.22 mg/l; LL₅₀ 96h (Oncorhynchus mykiss) = 79 mg/l
- to ground organisms: No data available.
- to plants and land animals: No data available.

12.2. Persistence and degradability

- biodegradation: No data available.
- other degradation processes: No data available.
- degradation in wastewater: Very toxic to aquatic life with long lasting effects.

12.3. Bioaccumulative potential

- bio-concentration factor (BCF): No data available.

12.4. Mobility in soil

- Known or predicted distribution in environmental compartments: No data available. **Method:** No data available.
- surface tension: No data available.
- absorption/desorption: No data available.
- other physical and chemical properties: See item 9.

12.5. Results of PBT and vPvB assessment

- data from chemical safety report: Further information relevant for the PBT assessment of this substance is necessary. This substance is a UVCB. Some of the samples of this substance for which analytical data is available contain constituents included in the SVHC candidate list as PBT/vPvB at concentrations above 0,1%. No other representative hydrocarbon structures were found to meet the PBT / vPvB criteria.

- 12.6. Other adverse effects:** No data available.

13. DISPOSAL CONSIDERATIONS

- 13.1 Waste treatment methods:** Product does not have classic waste, expect in case of unintentional release (see Item 6).
- **Waste codes:** 13 07 01*

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- Waste from residues:	Not applicable.
- Contaminated packaging:	Not applicable.
- Relevant provisions:	Act on Sustainable Waste Management, Regulation on waste catalogue, Ordinance on waste management.

14. TRANSPORT INFORMATION

14.1 UN number:	3082
14.2 UN proper shipping name:	ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUIDS, N.O.I. (Fuel oil residual)
14.3 Transport hazard class(es)	
ADR/RID/ADN/ICAO/IATA:	9
IMDG:	9
14.4 Packing group	
ADR/RID/ADN/IMDG/ICAO/IATA:	III
14.5 Environmental hazards	
ADR, RID, ADN, ICAO/IATA:	yes
IMDG:	yes, maritime pollutant
14.6 Special precautions for user	
ADR	RID
Transport category: 3	Transport category: 3
Vehicle for tank carriage: AT	Tank code: LGBV
Tank code: LGBV	Label: 9
Tunnel restriction code: (-)	Classification code: M6
Label: 9	Hazard identification: 90
Classification code: M6	Special provisions: 274, 335, 375, 601, W12, CW13, CW31.
Hazard identification: 90	
Special provisions: 274, 335, 375, 601, CV13.	
ADN	IMDG
Label: 9	Subsidiary risk: yes, maritime pollutant
Additional requirements/Remarks: 22, 27 *see 3.2.3.3	Group of the cargo: Category A
Dangers: 9+ (N1, N2, CMR, F or S)	Special provisions: 274, 335, 969, TP2, TP29.
Equipment required: * ; PP	EmS: F-A, S-F
Classification code: M6	Segregation group: Category A
Carriage permitted: T	

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Type of tank vessel: * ; N /*; 3
 Anti-explosion protection required: no
 Maximum degree of filling in %: * ; 97

ICAO

Label: 9 + identifier "Environmental hazard"
 Cargo IMP code: RMD
 Passenger and cargo aircraft: LQ-30 kg G
 (PI Y964); 450 I (PI 964)
 Cargo aircraft only: 450 I (PI 964)
 ERG code: 9L

14.7 Transport in bulk condition according to MARPOL Convention, Annex II and IBC Codex

Trade name:	Not applicable
Pollution category (according to MARPOL, Annex II):	Not applicable
Vessel type (according to IBC Code):	Not applicable
Special and operative requirements (according to IBC Code):	Not applicable

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

- **Applicable EU regulations:** EU Regulation No. 1906/2007 and No. 1272/2008 of the European Parliament and the Council; Commission Regulation (EU) 2015/830 of 28 May 2015 amending Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)
- **Applicable national regulations:** Chemicals Act; Regulations on Hazardous Substance Exposure Limit Values during Work and Biological Limit Values
- **Authorization information:** -
- **Restriction information:** -
- **Chemical Safety Assessment carried out (CSA):** YES X NO

16. OTHER INFORMATION

Revision indicators

Section:	Subject of change:
1	New product name added, two product codes changed
4	The most important symptoms and effects, acute and delayed
9	Physical and chemical properties
12	Results of PBT and vPvB assessment

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Full text of H- phrases, EUH- and P-phrases

H332	Harmful if inhaled
H350	May cause cancer.
H361fd	Suspected of damaging fertility. Suspected of damaging the unborn child.
H373	May cause damage to organs through prolonged or repeated exposure.
H400	Very toxic to aquatic life.
H410	Very toxic to aquatic life with long lasting effects.
EUH066	Repeated exposure can cause skin dryness or cracking.
P201	Obtain special instructions before use.
P260	Do not breathe dust/fume/ gas/mist/vapours/spray.
P273	Avoid release to the environment.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P308+P313	IF exposed or concerned: Get medical advice/attention.
P501	Dispose of contents/container in accordance with national regulations.

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CAS number	Chemical Abstract Service number
CLP	Classification, Labelling and Packaging of substances and mixtures
CSA	Chemical Safety Assessment
CSR	Chemical Safety Report
EC number	European Community number for identification of chemical substances commercially available in the EU
IATA	International Air Transport Association
ICAO	International Civil Aviation Organization
IMDG	International Maritime Dangerous Goods Code transport
LC50	Lethal concentration for 50% of tested organisms
LD50	Lethal concentration for 50% of tested organisms (medium lethal concentration)
OIN	Oil industry notes
PBT	Persistent, bioaccumulative and toxic
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals
RID	Regulations Concerning the International Transport of Dangerous Goods by Rail
STOT (SE)	Specific Target Organ Toxicity (Single Exposure)

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STOT (RE)	Specific Target Organ Toxicity (Repeated Exposure)
UVCB	Chemical Substances of Unknown or Variable Composition, Complex Reaction Products and Biological Materials
vPvB	Very persistent and very bioaccumulative

Statement:

This SDS is in compliance with the EU Regulation No. 1907/2006 and No. 1272/2008 of the European Parliament and the Council. It contains important user health and safety and environmental protection information. The information provided herein is not a substitute for any specification of quality and should not be deemed as a guarantee of the adequacy and applicability of this product for any purpose whatsoever. All information provided herein is based on our current knowledge and compliant with applicable legal regulations. The user is responsible for adherence to relevant legal regulations.

Data source:

1. www.hzt.hr
2. <http://echa.europa.eu/hr>
3. Hazard classification and labelling of petroleum substances in the EEA, Concawe 2017.
4. Handbook – Identified Uses of Petroleum Substances, Concawe; October 2019.

APPENDIX: EXPOSURE SCENARIOS ACCORDING TO CHEMICAL SAFETY REPORT