

SAFETY DATA SHEET

ExxonMobil

BENSIN RON 90, BENSIN RON 92, BENSIN RON 95, BENSIN RON 98

Section 1. Identification

Product name : BENSIN RON 90, BENSIN RON 92, BENSIN RON 95, BENSIN RON 98

Product description : Hydrocarbons and Additives

Other means of identification : BENSIN RON 90 (0% - 5% Ethanol); BENSIN RON 92 (0% - 5% Ethanol); BENSIN RON 95 (0% - 5% Ethanol); BENSIN RON 98 (0% - 5% Ethanol); GASOLINE 90 RON (0% - 5% Ethanol); GASOLINE 92 RON (0% - 5% Ethanol); GASOLINE 95 RON (0% - 5% Ethanol); GASOLINE 98 RON (0% - 5% Ethanol)

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

Identified uses : GASOLINE

Uses advised against : This product is not recommended for any industrial, professional or consumer use other than the identified uses above.

Supplier : PT. ExxonMobil Lubricants Indonesia
Wisma GKBI, 27th Floor
Jl. Jend Sudirman No. 28
Jakarta 10210 Indonesia
Or ExxonMobil Affiliates

24-Hour emergency telephone number : 1-800-424-9300/+1-703-527-3887 (CHEMTREC)

Supplier General Contact : 6221-525-1883

FAX : 62-21-571-5171

SDS Internet Address : www.sds.exxonmobil.com

Section 2. Hazards identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 1
SKIN CORROSION/IRRITATION - Category 2
GERM CELL MUTAGENICITY - Category 1B
CARCINOGENICITY - Category 1A
TOXIC TO REPRODUCTION - Category 2
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
ASPIRATION HAZARD - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements, including precautionary statements

Hazard pictograms :



Signal word : Danger

Hazard statements : H224 - Extremely flammable liquid and vapor.
H304 - May be fatal if swallowed and enters airways.
H315 - Causes skin irritation.
H336 - May cause drowsiness or dizziness.
H340 - May cause genetic defects.
H350 - May cause cancer.
H361 - Suspected of damaging fertility or the unborn child.
H373 - May cause damage to organs through prolonged or repeated exposure. (blood)
H411 - Toxic to aquatic life with long lasting effects.

Section 2. Hazards identification

Precautionary statements

General	: P101 - If medical advice is needed, have product container or label at hand. P102 - Keep out of reach of children. P103 - Read label before use.
Prevention	: P201 - Obtain special instructions before use. P202 - Do not handle until all safety precautions have been read and understood. P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. P240 - Ground and bond container and receiving equipment. P241 - Use explosion-proof electrical, ventilating or lighting equipment. P242 - Use non-sparking tools. P243 - Take action to prevent static discharges. P260 - Do not breathe vapor. P264 - Wash thoroughly after handling. P271 - Use only outdoors or in a well-ventilated area. P273 - Avoid release to the environment. P280 - Wear protective gloves, protective clothing and eye or face protection.
Response	: P301 + P331, P310 - IF SWALLOWED: Do NOT induce vomiting. Immediately call a POISON CENTER or doctor. P302 + P352 - IF ON SKIN: Wash with plenty of water. P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. P304 + P312, P340 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell. Remove person to fresh air and keep comfortable for breathing. P308 + P313 - IF exposed or concerned: Get medical advice or attention. P332 + P313 - If skin irritation occurs: Get medical advice/attention. P362 + P364 - Take off contaminated clothing and wash it before reuse. P370 + P378 - In case of fire: Use water fog, foam, dry chemical or carbon dioxide (CO ₂) to extinguish. P391 - Collect spillage.
Storage	: P403 + P233 - Store in a well-ventilated place. Keep container tightly closed. P403 + P235 - Keep cool. P405 - Store locked up.
Disposal	: P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.
Contains	: gasoline; benzene and toluene
Other hazards which do not result in classification	: None known.
Note	: This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

Ether oxygenates are significantly more soluble than other components of gasoline like benzene, toluene, ethyl benzene and xylenes (BTEX) if released into groundwater. Ether oxygenates may also biodegrade more slowly, have the potential to move farther and faster in groundwater and have the potential to contaminate larger areas of groundwater than BTEX if released into groundwater.

Section 3. Composition/information on ingredients

Substance/mixture	: Mixture
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Section 3. Composition/information on ingredients

Ingredient name	% by weight	Identifiers
gasoline	≥95	CAS: 86290-81-5
benzene	≥0.1 - <5	CAS: 71-43-2
ethyl alcohol	≤5	CAS: 64-17-5
toluene	>3	CAS: 108-88-3
n-hexane	<3	CAS: 110-54-3

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First-aid measures

Description of necessary first aid measures

- Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention. If necessary, call a poison center or physician. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Clean shoes thoroughly before reuse. Continue to rinse for at least 10 minutes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Get medical attention.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. Wash out mouth with water. Remove dentures if any. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Aspiration hazard if swallowed. Can enter lungs and cause damage. Do not induce vomiting. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : Causes skin irritation.
- Ingestion** : Can cause central nervous system (CNS) depression. May be fatal if swallowed and enters airways.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness

Section 4. First-aid measures

- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
Numbness, muscle cramps, weakness and paralysis that may be delayed.
- Skin contact** : Adverse symptoms may include the following:
irritation
redness
- Ingestion** : Adverse symptoms may include the following:
nausea or vomiting

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : If ingested, material may be aspirated into the lungs and cause chemical pneumonitis. Treat appropriately. This material, or a component, may be associated with cardiac sensitization following very high exposures (well above occupational exposure limits) or with concurrent exposure to high stress levels or heart-stimulating substances like epinephrine. Administration of such substances should be avoided.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

- Specific hazards arising from the chemical** : Extremely flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous combustion products** : Aldehydes, Incomplete combustion products, Oxides of carbon, Smoke, Fume, sulfur oxides
- Special protective actions for fire-fighters** : Use standard firefighting procedures and consider the hazards of other involved materials. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool. Assure an extended cooling down period to prevent re-ignition. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Shut off all ignition sources. No flares, smoking or flames in hazard area. Put on appropriate personal protective equipment. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage. This product contains ether oxygenates and it is important to respond quickly to any spills or leaks. Even a small release, if not quickly cleaned up, can contaminate large volumes of surface or groundwater. Personnel handling, transferring or dispensing this product should be trained to respond immediately to any spills or leaks to prevent contamination of groundwater.

Methods and materials for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Eliminate all ignition sources. Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Do not confine in area of spill. Allow liquid to evaporate from the surface. Seek the advice of a specialist before using dispersants. Advise occupants and shipping in downwind areas of fire and explosion hazard and warn them to stay clear. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

Section 7. Handling and storage

Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not swallow. Avoid release to the environment. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment.

Section 7. Handling and storage

Use only non-sparking tools. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by grounding and bonding containers and equipment before transferring material. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Static Accumulator

- : This material is a static accumulator. A liquid is typically considered a nonconductive, static accumulator if its conductivity is below 100 pS/m (100×10^{-12} Siemens per meter) and is considered a semiconductive, static accumulator if its conductivity is below 10,000 pS/m. Whether a liquid is nonconductive or semiconductive, the precautions are the same. A number of factors, for example liquid temperature, presence of contaminants, anti-static additives and filtration can greatly influence the conductivity of a liquid.

Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
-	ExxonMobil (COMPANY) TWA 8 hours: 100 ppm. Form: Vapor.. TWA 8 hours: 300 mg/m ³ . Form: Vapor..
gasoline	ACGIH TLV (United States, 1/2024) TWA 8 hours: 300 ppm. TWA 8 hours: 890 mg/m ³ . STEL 15 minutes: 500 ppm. STEL 15 minutes: 1480 mg/m ³ . ExxonMobil (COMPANY) STEL 15 minutes: 200 ppm. TWA 8 hours: 100 ppm.
benzene	Minister of Labor of the Republic of Indonesia (Indonesia, 4/2018) Absorbed through skin. TWA 8 hours: 0.5 ppm. STEL 15 minutes: 2.5 ppm. ACGIH TLV (United States, 1/2024) Absorbed through skin. TWA 8 hours: 0.02 ppm. ExxonMobil (COMPANY) Absorbed through skin. STEL 15 minutes: 1 ppm. TWA 8 hours: 0.2 ppm.
ethyl alcohol	Minister of Labor of the Republic of Indonesia (Indonesia, 4/2018) STEL 15 minutes: 1000 ppm. ACGIH TLV (United States, 1/2024) STEL 15 minutes: 1000 ppm.
toluene	Minister of Labor of the Republic of Indonesia (Indonesia,

Section 8. Exposure controls/personal protection

n-hexane	<p>4/2018) TWA 8 hours: 20 ppm. ACGIH TLV (United States, 1/2024) Ototoxicant. TWA 8 hours: 20 ppm. Minister of Labor of the Republic of Indonesia (Indonesia, 4/2018) [n-Heksan isomer-isomer lain] TWA 8 hours: 500 ppm. STEL 15 minutes: 1000 ppm. ACGIH TLV (United States, 1/2024) Absorbed through skin. TWA 8 hours: 50 ppm.</p>
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NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

Biological exposure indices

Ingredient name	Exposure indices
benzene	<p>Minister of Labor of the Republic of Indonesia (Indonesia, 4/2018) BEI: 500 µg/g creatinine, t-t-muconic acid [in urine]. Sampling time: end of work shift. BEI: 25 µg/g creatinine, S-phenylmercapturic acid [in urine]. Sampling time: end of work shift.</p>
toluene	<p>Minister of Labor of the Republic of Indonesia (Indonesia, 4/2018) BEI: 0.3 mg/g creatinine, o-cresol (with hydrolysis) [in urine]. Sampling time: end of work shift. BEI: 0.03 mg/L, toluene [in urine]. Sampling time: end of work shift. BEI: 0.02 mg/L, toluene [in blood]. Sampling time: end of work week.</p>
n-hexane	<p>Minister of Labor of the Republic of Indonesia (Indonesia, 4/2018) BEI: 0.4 mg/L, 2,5-hexanedione (without acid hydrolysis) [in urine]. Sampling time: end of work week.</p>

Appropriate engineering controls

- : Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

- : Personnel handling, transferring or dispensing this product should be trained to respond immediately to any spills or leaks to prevent contamination of groundwater. Consistent with regulatory control requirements, storage and handling equipment and systems should be capable of preventing soil and groundwater contamination by liquid spills and vapor emissions. Leak detection systems and programs are recommended.

Individual protection measures

Hygiene measures

- : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Section 8. Exposure controls/personal protection

- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated. < 1 hour (breakthrough time): Nitrile, minimum 0.38 mm thickness or comparable protective barrier material
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Respiratory protection** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use. Recommended: organic vapor (Type A) and particulate filter

Section 9. Physical and chemical properties and safety characteristics

Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

- Physical state** : Liquid.
- Color** : Green
- Odor** : Petroleum/Solvent
- Odor threshold** : Not available.
- pH** : Not applicable.
- Melting point/freezing point** : Not available.
- Boiling point or initial boiling point and boiling range** : >20°C (>68°F)
- Flash point** : Closed cup: <-40°C (<-40°F) [ASTM D-56]
- Evaporation rate** : >10 (butyl acetate = 1)
- Flammability** : Flammable liquids - Category 1
- Lower and upper explosion limit/flammability limit** : Lower: 1.2%
Upper: 8.2%
- Vapor pressure** : 517.54 mm Hg [34 °C]
- Relative vapor density** : Not available.
- Relative density** : 0.72 to 0.77
- Solubility in water** : Negligible Negligible for the hydrocarbon components. Ether oxygenates are significantly more soluble.
- Partition coefficient: n-octanol/water** : >3
- Auto-ignition temperature** : Not available.
- Decomposition temperature** : Not available.
- Viscosity** : <1 cSt [40 °C]

Particle characteristics

Section 9. Physical and chemical properties and safety characteristics

Median particle size : Not applicable.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

Chemical stability : The product is stable.

Possibility of hazardous reactions : Under normal conditions of storage and use, hazardous reactions will not occur.

Conditions to avoid : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition.

Incompatible materials : Reactive or incompatible with the following materials: oxidizing materials, Halogens, strong acids, Alkalies, Strong oxidizers

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product/ingredient name	Result
BENSIN RON 90, BENSIN RON 92, BENSIN RON 95, BENSIN RON 98	Rabbit - Dermal - LD50 >2000 mg/kg Rat - Oral - LD50 >5000 mg/kg Rat - Inhalation - LC50 Vapor >5000 mg/m ³ [4 hours]

Conclusion/Summary

- Inhalation** : Minimally Toxic. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 403
- Dermal** : Minimally Toxic. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 402
- Oral** : Minimally Toxic. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 401

Irritation/Corrosion

Conclusion/Summary

- Skin** : Irritating to the skin. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 404
- Eyes** : May cause mild, short-lasting discomfort to eyes. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 405
- Respiratory** : Negligible hazard at ambient/normal handling temperatures. No end point data for material. Elevated temperatures or mechanical action may form vapors, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.

Respiratory or skin sensitization

Conclusion/Summary

- Skin** : Not expected to be a skin sensitizer. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 406
- Respiratory** : Not expected to be a respiratory sensitizer. No end point data for material.

Mutagenicity

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Conclusion/Summary : May cause genetic defects. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 471 475 476

Carcinogenicity

Conclusion/Summary : May cause cancer. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 451

Classification

Product/ingredient name	IARC
gasoline	2B
benzene	1
ethyl alcohol	1
toluene	3

Reproductive toxicity

Conclusion/Summary : May damage the unborn child. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 416 421

Specific target organ toxicity (single exposure)

Conclusion/Summary : May cause drowsiness or dizziness. No end point data for material.

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Category	Target organs
BENSIN RON 90, BENSIN RON 92, BENSIN RON 95, BENSIN RON 98	Category 2	blood

Conclusion/Summary : May cause damage to organs through prolonged or repeated exposure. Data available. Based on test data for structurally similar materials. Test(s) equivalent or similar to OECD Guideline 410 412 453

Aspiration hazard

Product/ingredient name	Result
BENSIN RON 90, BENSIN RON 92, BENSIN RON 95, BENSIN RON 98	Category 1

Conclusion/Summary : May be fatal if swallowed and enters airways. Based on physico-chemical properties of the material. Data available.

Other information

Contains : ETHANOL: Prolonged or repeated exposure to high concentrations of ethanol vapor or overexposure by ingestion may produce adverse effects to brain, kidney, liver, and reproductive organs, birth defects in offspring, and developmental toxicity in offspring. BENZENE: Caused cancer (acute myeloid leukemia and myelodysplastic syndrome), damage to the blood-producing system, and serious blood disorders in human studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus and cancer in laboratory animal studies. N-HEXANE: Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system (e.g. fingers, feet, arms, legs, etc.). Simultaneous exposure to Methyl Ethyl Ketone (MEK) or Methyl Isobutyl Ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown. TOLUENE : Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (> 1500 ppm) have been reported to cause adverse fetal developmental effects.

Product : Gasoline unleaded: Caused cancer in animal tests. Chronic inhalation studies resulted in liver tumors in female mice and kidney tumors in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations In Vitro or In Vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing). Vapor concentrations above

Section 11. Toxicological information

recommended exposure levels are irritating to the eyes and the respiratory tract, may cause headaches and dizziness, are anesthetic and may have other central nervous system effects. Laboratory animal studies have shown that prolonged and repeated inhalation exposure to light hydrocarbon vapors in the same boiling range as this product can produce adverse kidney effects in male rats. However, these effects were not observed in similar studies with female rats, male and female mice, or in limited studies with other animal species. Additionally, in a number of human studies, there was no clinical evidence of such effects at normal occupational levels. In 1991, The U. S. EPA determined that the male rat kidney is not useful for assessing human risk. Gasoline unleaded: Caused cancer in animal tests. Chronic inhalation studies resulted in liver tumors in female mice and kidney tumors in male rats. Neither result considered significant for human health risk assessment by the United States EPA and others. Did not cause mutations In Vitro or In Vivo. Negative in inhalation developmental studies and reproductive tox studies. Inhalation of high concentrations in animals resulted in reversible central nervous system depression, but no persistent toxic effect on the nervous system. Non-sensitizing in test animals. Caused nerve damage in humans from abusive use (sniffing). Exposure to this material, or one of its components, in situations where there is the potential for high levels, such as in confined spaces or with abuse, may result in abnormal heart rhythm (arrhythmia). High-level exposure to hydrocarbons (above occupational exposure limits) may initiate arrhythmia in a worker that is undergoing stress or is taking a heart-stimulating substance such as epinephrine, a nasal decongestant, or an asthma or cardiovascular drug. Small amounts of liquid aspirated into the lungs during ingestion or from vomiting may cause chemical pneumonitis or pulmonary edema.

Section 12. Ecological information

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

Toxicity

Product/ingredient name	Result
BENSIN RON 90, BENSIN RON 92, BENSIN RON 95, BENSIN RON 98	Acute - EL50 daphnia - <i>Daphnia magna</i> 1 to 100 mg/l - data for similar materials [48 hours] Acute - EL50 Algae - <i>Pseudokirchneriella subcapitata</i> 1 to 1000 mg/l - data for similar materials [72 hours] Acute - LL50 Fish - <i>Fish</i> 1 to 100 mg/l - data for similar materials [96 hours] Chronic - NOEL Algae - <i>Pseudokirchneriella subcapitata</i> 1 to 100 mg/l - data for similar materials [72 hours] Chronic - NOEL daphnia - <i>Daphnia magna</i> 1 to 10 mg/l - data for similar materials [21 days]

Conclusion/Summary

- Acute toxicity** : Toxic to aquatic life.
Chronic toxicity : Toxic to aquatic life with long lasting effects.

Persistence and degradability

Product/ingredient name	Result
BENSIN RON 90, BENSIN RON 92, BENSIN RON 95, BENSIN RON 98	Ready Biodegradability <60% [28 days]
Biodegradability	: Material -- Expected to be inherently biodegradable
Atmospheric Oxidation	: Majority of components -- Expected to degrade rapidly in air

Section 12. Ecological information

Bioaccumulative potential

Conclusion/Summary

: Majority of components -- Has the potential to bioaccumulate, however metabolism or physical properties may reduce the bioconcentration or limit bioavailability.

Mobility in soil

Mobility

: High molecular wt. component -- Low potential to migrate through soil. Low molecular wt. component -- Moderate potential to migrate through soil. Majority of components -- Highly volatile, will partition rapidly to air. Moderate potential to migrate through soil. Not expected to partition to sediment and wastewater solids. Ether oxygenates are significantly more soluble than other components of gasoline like benzene, toluene, ethyl benzene and xylenes (BTEX) if released into groundwater. Ether oxygenates may also biodegrade more slowly, have the potential to move farther and faster in groundwater and have the potential to contaminate larger areas of groundwater than BTEX if released into groundwater.

Other ecological information

Other adverse effects






: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods

: The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Section 14. Transport information

	ADR	IMDG	IATA
UN number	UN1203	UN1203	UN1203
UN proper shipping name	(gasoline, benzene)	(gasoline, benzene)	(gasoline, benzene)
Transport hazard class(es)	3	3	3
Label(s) / Mark(s)	 	 	
Packing group	I	I	I
Environmental hazards	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.

Additional information

Section 14. Transport information

- ADR** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg. Flash point <-40 °C C.C.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not applicable.

Section 15. Regulatory information

Inventory list

- Australia inventory (AIIIC)** : All components are listed or exempted.
- Canada inventory (DSL-NDSL)** : All components are listed or exempted.
- China inventory (IECSC)** : Not determined.
- Japan inventory (CSCL)** : All components are listed or exempted.
- Japan inventory (Industrial Safety and Health Act)** : Not determined.
- New Zealand Inventory of Chemicals (NZIoC)** : All components are listed or exempted.
- Philippines inventory (PICCS)** : All components are listed or exempted.
- Korea inventory (KECI)** : All components are listed or exempted.
- Taiwan Chemical Substances Inventory (TCSI)** : All components are listed or exempted.
- United States inventory (TSCA 8b)** : All components are active or exempted.

Section 16. Other information

History

- Date of issue/Date of revision** : 7 July 2025
- Date of previous issue** : No previous edition
- Version** : 1
- Key to abbreviations** : ATE = Acute Toxicity Estimate
BCF = Bioconcentration Factor
GHS = Globally Harmonized System of Classification and Labelling of Chemicals
IATA = International Air Transport Association
IBC = Intermediate Bulk Container
IMDG = International Maritime Dangerous Goods
LogPow = logarithm of the octanol/water partition coefficient
MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
N/A = Not available
SGG = Segregation Group
UN = United Nations

Procedure used to derive the classification

Section 16. Other information

Classification	Justification
FLAMMABLE LIQUIDS - Category 1	On basis of test data
SKIN CORROSION/IRRITATION - Category 2	Calculation method
GERM CELL MUTAGENICITY - Category 1B	Calculation method
CARCINOGENICITY - Category 1A	Calculation method
TOXIC TO REPRODUCTION - Category 2	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3	Calculation method
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
ASPIRATION HAZARD - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

References : Not available.

Indicates information that has changed from previously issued version.

Product code : 1171674

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