TotalEnergies Petrochemicals & Refining USA, Inc.

Product Summary: Atosol Aromatic Solvents
December 2021

Product Overview

Atosol[1] Aromatic Solvents (Atosols) are complex mixtures of aromatic hydrocarbons. They are sold in bulk for use in downhole applications in oilfields, as effective solvents in industrial applications for chemical processing, as resin blendstocks for foundries, as cleaning solvents in industrial applications, and in specialty paints and pesticides. Atosols are generally low to moderate in toxicity, and can be safely handled using standard industrial hygiene, storage, and transportation practices.

Product Identity

Atosol 100
Solvent naphtha (petroleum), light arom., CAS[2] Registry Number 64742-95-6

Atosol 100 is a complex mixture of aromatic hydrocarbons which is predominantly composed of C8–C10 aromatics in the form of alkylbenzenes from distillation of petroleum. More specifically, it contains significant amounts of trimethylbenzenes and methyl-ethylbenzenes. It contains less than 0.5% ethylbenzene (CAS RN 100-41-4) and less than 0.1% benzene (CAS RN 71-43-2) and naphthalene (CAS RN 91-20-3). This product may contain approximately 25 ppm BHT (CAS RN 128-37-0).

Atosol 115
Aromatic hydrocarbons, C9-11, CAS RN 70693-06-0

Atosol 115 is a complex mixture of aromatic hydrocarbons which is predominantly composed of C9–C11 aromatics in the form of alkylbenzenes from distillation of petroleum. More specifically, it contains significant amounts of trimethylbenzenes and methyl-ethylbenzenes. It contains less than 0.5% ethylbenzene (CAS RN 100-41-4), less than 0.1% benzene (CAS RN 71-43-2) and less than 1% naphthalene (CAS RN 91-20-3). This product may contain approximately 25 ppm BHT (CAS RN 128-37-0).

Atosol 150
Solvent naphtha (petroleum), heavy arom., CAS RN 64742-94-5

Atosol 150 is a complex mixture of aromatic hydrocarbons which is predominantly composed of C10–C12 aromatics in the form of alkylbenzenes and alkylnaphthalenes from distillation of petroleum. More specifically, it contains significant amounts of dimethyl-ethylbenzenes and tetramethylbenzenes. It also contains naphthalene (CAS RN 91-20-3) at levels typically less than 10%. It contains less than 0.1% ethylbenzene (CAS RN 100-41-4) and benzene (CAS RN 71-43-2). This product may contain approximately 25 ppm BHT (CAS RN 128-37-0).

[1] The name "Atosol" is TotalEnergies Petrochemicals & Refining USA, Inc.'s Registered Trademark for the aromatic solvents described in this product summary.
[2] CAS Registry Number is a Registered Trademark of the American Chemical Society.

Atosol 200
Solvent naphtha (petroleum), heavy arom., CAS RN 64742-94-5

Atosol 200 is a complex combination of hydrocarbons obtained from distillation of aromatic streams. It consists predominantly of aromatic hydrocarbons having carbon numbers predominantly in the range of C11 through C15. More specifically, it contains significant amounts of methylnaphthalenes. It also contains naphthalene (CAS RN 91-20-3) at levels typically less than 10%. It contains less than 0.1% ethylbenzene (CAS RN 100-41-4) and benzene (CAS RN 71-43-2). This product may contain approximately 20 ppm BHT (CAS RN 128-37-0).

Atosol 200AN
Distillates, petroleum, catalytic reformer fractionator residue, low-boiling, CAS RN 68477-31-6

Atosol 200AN is a complex mixture of aromatic hydrocarbons which is predominantly composed of C11–C15 aromatics in the form of alkylnaphthalenes from distillation of petroleum. More specifically, it contains significant amounts of methylnaphthalenes. It contains less than 10% naphthalene (CAS RN 91-20-3). It contains less than 0.1% ethylbenzene (CAS RN 100-41-4) and benzene (CAS RN 71-43-2). This product may contain approximately 20 ppm BHT (CAS RN 128-37-0).

Atosol 200ND
Solvent naphtha (petroleum), heavy arom., CAS RN 64742-94-5

Atosol 200 ND is a complex mixture of aromatic hydrocarbons which is predominantly composed of C11–C15 aromatics in the form of alkylnaphthalenes from distillation of petroleum. More specifically, it contains significant amounts of methylnaphthalenes. It is a naphthalene (CAS RN 91-20-3) depleted solvent, containing less than 1% naphthalene. It contains less than 0.1% ethylbenzene (CAS RN 100-41-4) and benzene (CAS RN 71-43-2). This product may contain approximately 20 ppm BHT (CAS RN 128-37-0).

Atosol 250
Distillates, petroleum, catalytic reformer fractionator residue, intermediate-boiling Aromatic Solvent Bottoms, CAS RN 68477-30-5

Atosol 250 is a complex mixture of aromatic hydrocarbons which is almost entirely composed of carbon numbers C15 and higher. It contains less than 1% naphthalene (CAS RN 91-20-3) and less than 0.1% of lower aromatics. This product may contain approximately 20 ppm BHT (CAS RN 128-37-0).

Physical/chemical properties

Consult the individual products' safety data sheets for a full listing of physical/chemical properties.

Physical Hazards

Some Atosols are classified as flammable hazards. Several Atosols are classified for transportation as environmental hazards due to their naphthalene content.

	Atosol 100 Atosol 115	**Atosol 150**	**Atosol 200 Atosol 200AN**	**Atosol 200ND Atosol 250**
OSHA GHS Flammability	Flammable liquids Cat. 3	Flammable liquids Cat. 4	-	-
DOT Hazard	Flammable liquid PG III	Combustible liquid	Environmentally hazardous substance	-
IMDG Hazard	Flammable liquid PG III	Environmentally hazardous substance	Environmentally hazardous substance	-
IATA Hazard	Flammable liquid PG III	Environmentally hazardous substance	Environmentally hazardous substance	-
Marine Pollutant (DOT and IMDG)	Yes	Yes	Yes	-

Health Effects

The GHS health hazard classifications based on OSHA Hazard Communication regulations (29 CFR 1910.1200) [3] for Atosols are described below. For additional information including GHS hazard statements, precautionary statements, and information on specific target organ toxicity (STOT), the safety data sheet for the specific product should be consulted.

Aromatic hydrocarbon solvents are aspiration hazards. If aspirated into the lungs due to ingestion or from vomiting, chemical pneumonitis (inflammation of lung tissue) or pulmonary edema (abnormal buildup of fluid in the air spaces of the lungs) may develop. These are serious, potentially life threatening, medical conditions which require immediate and proper medical attention.

These solvents have low to moderate toxicity by ingestion, skin contact and inhalation. Some of these solvents are classified for specific target organ toxicity effects based on specific substances in the composition.

Exposure to these solvents may cause skin and eye irritation. Atosol 100 and 115 are classified as skin and eye irritants, and other Atosols may have potential for milder irritation. Inhalation of high vapor concentrations of Atosols may cause respiratory irritation and/or central nervous system (CNS) depression resulting in drowsiness and dizziness.

To the best of our knowledge, exposure to these substances shows no evidence of causing harm to reproduction or the developing fetus, and no evidence of causing adverse effects on genetic material.

Some Atosol products may contain naphthalene at levels greater than 0.1%. Exposure to naphthalene may cause destruction of red blood cells, anemia, and cataracts. Different governmental and non-governmental agencies rate the cancer-causing potential (carcinogenicity) of chemicals. Some carcinogenicity ratings for naphthalene include:

Agency	Naphthalene Carcinogenicity
International Agency for Research on Cancer (IARC)	Possibly carcinogenic to humans
National Toxicity Program (NTP)	Reasonably anticipated to be human carcinogens
American Conference for Governmental Industrial Hygienists (ACGIH)	Not classifiable for humans or animals.

This results in an OSHA GHS carcinogen category 2 classification for Atosols with a naphthalene concentration of greater than 0.1%.

Potential for Exposure

Environmental Exposure

Atosols are relatively easy to handle and to contain, reducing the chance for release to the environment. However, in the event of a spill, data has shown that the components that make up Atosols will degrade rapidly and not persist in the environment. Aromatic hydrocarbon solvents are moderately toxic to freshwater fish, invertebrates, and algae. Storage tanks containing these solvents should be engineered

[3] OSHA does not provide GHS hazard classifications for a chemical or a substance. OSHA places the responsibility of GHS hazard classification upon the manufacturers (or importers) of the chemical (see 21 CFR 1910.1200(d)). Therefore, GHS hazard classification in the United States may differ from manufacturer (or importer) to manufacturer (or importer). Additionally, these GHS hazard classifications may differ from other internationally established GHS classifications, such as those in the Europe Union or Japan.
The provided GHS classifications are current as of the date of this document. However, the GHS classifications are subject to change as new information is obtained. The user should always refer to the most recent product SDS to confirm the GHS classifications.

to prevent contact with water resources, as this material could contaminate the water resources. Surface spills can reach groundwater through porous soil or cracked surfaces. The storage tanks should be monitored regularly for leaks.

Efforts should be made to prevent any leaks or spills of these solvents. Where spills or leaks are possible, a comprehensive response plan should be developed and implemented.

To prevent environmental exposure, adequate care must be taken in the transfer of the bulk products and in the design of transfer and storage facilities. Workers must be appropriately trained to properly handle, load, and transport the product.

Industrial Worker Exposure

Ventilation must be provided for industrial workers in order for exposure levels to stay below established standards. Workers should wear safety glasses with side shields, fire retardant clothing covering the entire body, and chemical resistant gloves, as appropriate for the work being done. If handling large volumes, splash goggles may be needed. Change gloves frequently to limit potential exposure due to glove "breakthrough". If inhalation exposure above industry or regulatory standards is possible, an appropriate respirator must be worn.

Consumer/General Public Exposure

TotalEnergies Petrochemicals & Refining USA, Inc. (TEPRI) does not directly sell Atosol products for use by consumers. It may be possible that TEPRI customers may formulate these solvents into consumer products. In such cases, TEPRI's customers are responsible for appropriately considering and providing the information TEPRI provides in the Safety Data Sheets for Atosol products and for their products being safe for their intended uses. Potential exposure to these solvents used in consumer products can be minimized by using these consumer products only with adequate ventilation and wearing chemical resistant gloves. Gloves should be changed frequently.

Storing and Transporting Atosols

Store and use away from heat, sparks, open flame, or any other ignition source. Keep in a cool and well-ventilated area. Storage tanks should be engineered to prevent contact with water resources, as this material could contaminate the water resources. Surface spills can reach groundwater through porous soil or cracked surfaces. The storage tanks should be monitored regularly for leaks. Facilities which store these products should have a comprehensive response plan for spills or leaks.

Use only in a well-ventilated area. If ventilation is inadequate, use respiratory protection. Atosol products, like all other hydrocarbon liquids, should never be siphoned by mouth.

Static charges can accumulate during shipping, unloading, pouring, or transferring operations. 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.

Product Stewardship Contact Information:

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Additional Information

Additional information on the handling and safe use of solvents can be obtained from the European Solvents Industry Group Internet website (http://www.esig.org/) and the Solvents Industry Association Internet website (https://www.solvents.org.uk/).

EPA's Office of Pollution Prevention and Toxics reviewed some Atosol solvents for use in food-use pesticides products and approved this use. For addition information on this or for commercial inquiries regarding our Atosol solvents, send an email to: rc.hou-solvents-customer-service-mailbox@totalenergies.com.

TotalEnergies Petrochemicals & Refining USA, Inc. Material Safety Data Sheets for Atosols https://corporate.totalenergies.us/product-stewardship

General References

1. SIDS DOSSIER ON THE HPV CHEMICAL Predominant Alkylnaphthalene (bicyclic) Hydrocarbon Solvents, Part of the C10-12 Aromatic Hydrocarbon Solvents, International Hydrocarbon Solvents Consortium, DRAFT – EPA Review Draft, November 1, 2003.
2. SIDS DOSSIER ON THE HPV CHEMICAL Predominant Alkylbenzene (monocyclic) Hydrocarbon Solvents, Part of the C10-12 Aromatic Hydrocarbon Solvents, International Hydrocarbon Solvents Consortium, DRAFT – EPA Review Draft, November 1, 2003.
3. C10-C12 Aromatics Hydrocarbon Solvents Category Test Plan, International Hydrocarbon Solvents Consortium, Draft, July 7, 2005.
4. Toxicological Profile For Naphthalene, 1-Methylnaphthalene, And 2-Methylnaphthalene, U.S. Department Of Health And Human Services, Public Health Service, Agency for Toxic Substances and Disease Registry (ATSDR), August 2005.
5. Wil Research Europe 500589, 500590, 500592, 500599, 500600, 500593, 892002, 892004, & 892005 Reports
6. Product Safety Labs 35569, 35570, 35571, 35580, 35581, & 35582 Reports
7. SDSs for Atosol 100, Atosol 115, Atosol 150, Atosol 200, Atosol 200AN, Atosol 200ND, Atosol 250