



SASOL

Product Stewardship Summary

Ethylene Co-Products (Heavy Aromatic Distillate)

Introduction:

This Product Stewardship Summary document is a summary intended to provide the general public with an overview of product safety information on this chemical substance. It contains basic information and is not intended to provide emergency response information, medical or treatment information, or to provide a discussion of all safety and health information. This document is not intended to replace the Safety Data Sheet (SDS). Before handling or using Ethylene Co-products (Heavy Aromatic Distillate [HAD]), the relevant SDS has to be consulted.

The substances in HAD are synthetic chemicals that do not occur naturally. Since the majority of HAD is used as industrial feedstocks, industrial solvents, and industrial fuels, the primary source of exposure exists within the industrial sectors where HAD is manufactured or used (chemical manufacture, fuel blending). Natural degradation processes and wastewater treatment techniques remove a large proportion of HAD from water, however there is still potential for aquatic exposure.



Chemical Identity and Properties:

HAD is a co-product of ethylene production and contains a mixture of petroleum raffinates and other aromatic compounds such as the ones found in gasoline and other fuels.

At ambient temperature and pressure HAD is a brown oily organic liquid with a strong aromatic characteristic odor. The specific gravity at 25°C is approximately 0.92, which is lower than that of water. These substances do not freeze under ambient temperatures, have relatively high vapor pressures (are volatile) and are not readily soluble in water. They are highly flammable liquids.

Uses:

HAD is primarily used as a chemical feedstock or intermediate for chemical manufacturing or as a fuel

blend stock. HAD is not directly used in household or personal care products.



Health Effects Summary:

Effect Assessment	Result
Acute Toxicity	May be fatal if swallowed and enters airways (aspiration hazard)
Irritation / corrosion	Causes serious eye irritation and is a skin irritant.
Sensitization	Not considered to be sensitizing.
Toxicity after repeated exposure	Causes damage to organs through repeated exposure.
Genotoxicity / mutagenicity	May cause genetic defects.
Carcinogenicity	May cause cancer.
Toxicity for reproduction	No available data.

Environmental Information:

Based on available data for the pure substances, HAD is toxic to aquatic organisms with long lasting effects. They do not bioaccumulate, are readily biodegradable and will not persist in the environment.

Environmental Effects Summary:

Effect Assessment	Result
Aquatic Toxicity	Toxic to aquatic life with long lasting effects.

Environmental Fate Summary:

Fate and Behavior	Result
Biodegradation	Readily biodegradable.
Bioaccumulation potential	Does not bioaccumulate.
Mobility	The product will evaporate rapidly.



Exposure Potential:

Exposure to personnel in manufacturing facilities is considered very low because the process, storage and handling operations are enclosed. Workers who might accidentally come in contact with the non-formulated, undiluted substances should follow the safety measures recommended in the Safety Data Sheet (SDS).

The exposure of consumers or the general public to HAD is judged to be negligible as it is not used in consumer products and is readily degraded in the environment.

Risk Management:

HAD can be stored, transferred, processed and disposed of safely when proper procedures and safeguards are employed in industrial use. HAD production is carried out in equipment designed to prevent exposure to workers and release to the environment. Tanks, piping, pumps, and other processing equipment are specified for handling of these materials. Secondary containment around storage tanks, process air combustion, scrubbers and other means are used to further protect from release to the environment. Access to the production facility is restricted to employees, and approved contractors and visitors.

Personal protective equipment such as chemical resistant suits, gloves and boots, goggles or face shields must be worn when handling or transferring HAD as dictated by the extent of potential exposure. Steel drums, tank trucks, railcars and other transport vessels are inspected prior to and after loading to ensure that no product is released. Carriers are approved and their performance reviewed. Sasol utilizes Chemtrec® and the National Chemical Emergency Centre (NCEC) as 24 hour contact numbers to provide emergency response information to transportation workers and first responders in the case of an accident en route.



Safety Data Sheets (SDS) for each product and practical safe handling information are provided to our customers and carriers so that they are able to use and transport our products safely. These documents include chemical and physical properties, recommended storage conditions and personal protective equipment, firefighting and first aid information, accidental release measures, exposure guidelines and other regulatory information. Please refer to these documents for additional details.



Regulatory Information:

HAD is classified as hazardous for workers and in transportation. They are regulated under a variety of

local, state, federal and international laws requiring exposure and environmental controls, as well as various means of hazard communication such as labeling and SDS.

Classification and labelling

Under GHS, substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the SDS. GHS attempts to standardize hazard communication so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use. The following classification and labelling information is based on the US Occupational Safety and Health Administration (OSHA) Hazard Communication Standard. Other regional classification and labelling information, such as substances registered for REACH in the European Union (EU), may differ from the US classification and labelling information.

Classification

Flammable liquids	Category 2
Carcinogenicity	Category 1A
Mutagenicity	Category 1B
Specific Target Organ Toxicity – Repeated Exposure	Category 1
Aspiration Hazard	Category 1
Eye Irritation	Category 2A
Skin Irritation	Category 2
Chronic Aquatic Toxicity	Category 2

Labelling

Signal word: **Danger**

Hazard pictograms:



Hazard statements:

- H225 Highly flammable liquid and vapour.
- H304 May be fatal if swallowed and enters airways.
- H315 Causes skin irritation.
- H319 Causes serious eye irritation.
- H340 May cause genetic defects.
- H350 May cause cancer.
- H372 Causes damage to organs through prolonged or repeated exposure.
- H 411 Toxic to aquatic life with long lasting effects.

Precautionary statements:

- P210 Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- P240 Ground/bond container and receiving equipment.
- P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.
- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P260 Do not breathe dust/ fume/ gas/ mist/ vapours/ spray.
- P264 Wash skin thoroughly after handling.
- P270 Do not eat, drink or smoke when using this product.
- P273 Avoid release to the environment.
- P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.
- P370 + P378 In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide for extinction.
- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/doctor.
- P331 Do NOT induce vomiting.
- P332 + P313 If skin irritation occurs: Get medical advice/ attention.
- P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- P337 + P313 If eye irritation persists: Get medical advice/ attention.
- P308 + P313 IF exposed or concerned: Get medical advice/ attention.
- P314 Get medical advice/ attention if you feel unwell.

P391 Collect spillage
 P403 + P405 + P235 Store locked up in a well-ventilated place. Keep cool.

Product Stewardship:

Sasol is firmly committed to the safe manufacture, handling and distribution of our products. We incorporate product stewardship and safety into our operating and business decisions. We actively communicate our product stewardship expectations to new and existing customers and distributors. Our procedures require evaluation of potential customers with regard to the suitability of the proposed use and the safe handling systems in place prior to establishing a supply relationship. We conduct audits of customers, warehouses, and carriers as appropriate. We perform periodic product risk reviews to identify actions we can take to further minimize risk with regard to distribution and use of our products. We provide SDS and safe handling information to customers. We welcome questions and open communication with customers regarding practical handling and safety practices for our products. Our SHES (safety, health, environmental & security), operations, maintenance and technical service personnel are ready resources for customers and others involved in using or transporting our products.

Conclusion:

HAD is an important chemical feedstock and fuel blend stock used by industrial customers. Although HAD is a hazardous material, it is regulated for public safety and measures are in place for its safe manufacture, storage, distribution and use.

For Further Information:

E-mail address	usasales@sasol.com
ICCA portal	http://www.icca-chem.org/en/Home/Global-Product-Strategy/

Glossary:

Acute toxicity Harmful effect resulting from a single or short term exposure to a substance.

Biodegradation Decomposition or breakdown of a substance under natural conditions (action of microorganisms, etc.).

Bioaccumulation Progressive accumulation in living organisms of a chemical substance present in the environment.

Carcinogenicity Substance effects causing cancer.

Chronic toxicity Harmful effect after repeated exposures or long term exposure to a substance.

Clastogenicity Substance effect that causes breaks in chromosomes.

Embryotoxicity Harmful effect on fetal health.

Flash point The lowest temperature at which vapor of the substance may form an ignitable mixture with air.

Genotoxicity Substance effect that causes damage to genes, including mutagenicity/clastogenicity.

GHS Global Harmonized System on Classification and Labelling of chemicals.

Hazard Inherent substance property bearing a threat to health or environment.

Mutagenicity Substance effect that cause mutation on genes.

Persistence Refers to the length of time a compound stays in the environment, once introduced.

REACH REACH stands for Registration, Evaluation, Authorisation and Restriction of Chemicals. REACH is a regulation of the European Union, adopted to improve the protection of human health and the environment from the risks that can be posed by chemicals, while enhancing the competitiveness of the EU chemicals industry.

Reprotoxicity Including teratogenicity, embryotoxicity and harmful effects on fertility.

Sensitizing Allergenic.

Sediment	Topsoil, sand and minerals washed from land into water forming in the end a layer at the bottom of rivers and sea.
Teratogenic	Substance effect on fetal morphology.
Vapor pressure	A measure of a substance's property to evaporate.
Volatile	Any substance that evaporates readily.

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References:

Heavy Aromatic Distillate (HAD) SDS

Disclaimer:

This product stewardship summary is intended to give general information about the chemical or categories of chemicals addressed. It is not intended to provide an in-depth discussion of health and safety information. Additional information is available through the chemical's applicable Safety Data Sheet which should be consulted before use of the chemical. The product stewardship summary does not supplant or replace required regulatory and/or legal communication documents.

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