Product Stewardship Summary

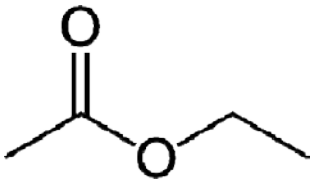
Ethyl Acetate

General Statement

Ethyl acetate is an organic liquid typically used as a solvent in industrial and laboratory activities. It is flammable and irritating, but displays little toxicity when ingested. Ethyl acetate (often from a natural source) is used to decaffeinate coffee and tea.

Chemical Identity

Name: ethyl acetate
Brand Names: Contained in some products in the Aroset™ product line
Chemical name (IUPAC): ethyl ethanoate
CAS number(s): 141-78-6
EC number: 205-500-4
Molecular formula: $C_4H_8O_2$
Structure:



Uses and Applications

Ashland uses ethyl acetate primarily as a solvent in the Aroset solvent-based pressure sensitive adhesives which are used for industrial applications. In addition to Ashland's use, ethyl acetate is used as a solvent for laboratory chromatography, as an activator in paints and to decaffeinate teas and coffee.

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Physical/Chemical Properties

Phys/Chem Safety Assessment

Property	Value
Form	Colorless liquid
Physical state	Liquid
Color	Colorless
Odor	Ether like odor reminiscent of pineapple. Odor
Density	0.9003 g/cm3 @ 25 °C
Melting / boiling point	-83.6 °C / 77.1 °C
Flammability	H225: Highly flammable liquid and vapor
Explosive properties	Not explosive
Self-ignition temperature	426 °C
Vapor pressure	9.83 kPa @ 20 °C
Mol weight	88.105
Water solubility	80.3 g/l @ 25 °C
Flash point	-4 °C @ 1 atm
Octanol-water partition coefficient ($Logk_{ow}$)	0.68 @ 25 °C

Exposure, Hazard and Safety Assessment

The following section describes possible exposures scenarios and hazards associated with acetic acid. The exposure assessment describes both the amount of and the frequency with which a chemical substance reaches a person, a population of people, or the environment. Hazard refers to the inherent properties of a substance that make it capable of causing harm to human health or the environment. The safety assessment reports the possibility of a harmful event arising from exposure to a chemical or physical agent under specific conditions. Just because a substance may possess potentially harmful properties does not mean that it automatically poses a risk. It is not possible to make that determination without understanding the exposure.

Human Health Effects

Human Exposure Assessment

Consumer: Consumers are unlikely to encounter harmful amounts of ethyl acetate. Exposure to residual ethyl acetate in decaffeinated coffees and teas is not expected to cause toxicity. Use of other ethyl acetate-containing consumer products such as nail polish removers is safe when performed according to product directions.

Worker:
Industrial uses of ethyl acetate employ control measures to prevent harmful exposure to workers

Human Hazard Assessment

Effect Assessment	Result
Acute Toxicity Oral / inhalation / dermal	H336: May cause drowsiness or dizziness
Irritation / corrosion Skin / eye / respiratory test	Not classified
Sensitization	Not classified
Toxicity after repeated exposure Oral / inhalation / dermal	Not classified
Genotoxicity / Mutagenicity	Not classified
Carcinogenicity	Not classified
Reproductive / Developmental Toxicity	Not classified
Aspiration hazard	Not applicable

Human Health Safety Assessment

Consumer: Inhalation of high concentrations of ethyl acetate may cause temporary central nervous system depression, leading to drowsiness and dizziness.

Worker: Inhalation of high concentrations of ethyl acetate may cause temporary central nervous system depression, leading to drowsiness and dizziness. Contact with the eyes can cause serious irritation.

Environmental Effects

Environmental Exposures

Releases of Ethyl acetate from normal use are unlikely to cause any environmental harm.

Environmental Hazard Assessment:

Effect Assessment	Result
Aquatic toxicity	Not classified

Fate and behavior	Result
Biodegradation	Readily biodegradable
Bioaccumulation potential	Low potential to bioaccumulative
PBT / vPvB conclusion	Not PBT or vPvB

Environmental Safety Assessment

Ethyl acetate exhibits low toxicity to aquatic organisms.

Risk Management Recommendations

Ensure proper ventilation when working with ethyl acetate. Avoid sparks or other potential ignition sources. Ethyl acetate is explosive in air from 2.2-11.5% by volume.

Exposure to ethyl acetate in the workplace is covered by established exposure limits. A partial list of references follows:

- US OSHA PEL: 400 ppm (8h TWA)
- ACGIH TLV: 400 ppm (8h TWA)
- EU and member states: http://osha.europa.eu/en/topics/ds/oel/index.stm/members.stm
- China: 400 ppm (8h TWA)

Regulatory Agency Review

Ethyl acetate is listed in:

- the list of REACH registered substances (EC) 1907/2006
- the US TSCA inventory
- Canada's DSL list
- the Australia Index of Chemical Substances
- the China Inventory of Existing Chemical Substances
- the Japan Inventory of Existing and New Chemical Substances
- the Korea Existing Chemicals Inventory
- the New Zealand Inventory of Chemicals
- the Philippines Inventory of Chemicals and Chemical Substances

Regulatory Information / Classification and Labeling

Under the Globally Harmonized System for classification and labeling (GHS), substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels, Safety Data Sheets (SDS) and accessory documentation required by local hazard communication standards. GHS provides standardized hazard classification and communication elements designed for global applications so that the intended audience (workers, consumers, transport workers, and emergency responders) can better understand the hazards of the chemicals in use.

GHS Classification:

Flammable liquids: Category 2
Serious eye damage/eye irritation: Category 2
Specific target organ toxicity (single): Category 3 (inhalation – central nervous system)

Hazard Statements:

H225: Highly flammable liquid and vapor
H336: May cause drowsiness or dizziness
H319: Causes serious eye irritation (Annex VI classification)

Signal Word:

Danger

Precautionary Statements:

P210: Keep away from heat/sparks/open flames/.../hot surfaces. ... No smoking
P233: Keep container tightly closed
P241: Use explosion-proof electrical/ventilating/lighting/.../equipment
P242: Use only non-sparking tools
P243: Take precautionary measures against static discharge
P271: Use only outdoors or in a well-ventilated area
P280: Wear protective gloves/protective clothing/eye protection/face protection

Hazard Pictograms:

Conclusion

Ethyl acetate is a highly flammable chemical with the potential to cause dizziness and drowsiness when inhaled. Users of ethyl acetate must ensure that the chemical is kept away from sources of ignition and that vapor levels are controlled.
Emissions to air and water should be minimized, and spills meeting local reporting requirements should be promptly communicated to appropriate authorities. When working with ethyl acetate, proper ventilation is essential to safe handling.

Contact Information with Company

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Additional Information

For more information on GHS, visit http://www.osha.gov/dsg/hazcom/ghsguideoct05.pdf or http://live.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html.

Ashland product stewardship summaries are located at
http://www.ashland.com/sustainability/product/product-stewardship

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REACH registration is specific to Importers/Manufacturers that place the chemical on the EU market, and is specific to registered uses. Inclusion on the list of REACH Registered Substances does not automatically imply registration by Ashland.

Inclusion on the New Zealand Inventory of Chemicals applies only to the pure substance listed. The importer of record must determine whether or not their substances are in compliance.