

# MATERIAL SAFETY DATA SHEET

**TORLON(R) 4301-HF**

MSDS No. 12732 EU/ENGLISH

## SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**MANUFACTURER/SUPPLIER:**

Solvay Advanced Polymers, L.L.C.  
4500 McGinnis Ferry Road  
Alpharetta, Georgia 30005  
USA

**EMERGENCY INFORMATION:**

+49 894 556 0321  
800 76 76 7600

**OTHER PRODUCT INFORMATION:**

+32 5 533 9505

Solvay Advance Polymers Belgium  
Industriepark De Bruwaan 9  
9700 Oudenaarde  
Belgium

**SUBSTANCE: TORLON(R) 4301-HF**

**CREATION DATE:** Nov 29 1999

**REVISION DATE:** Jan 06 2000

## SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

**COMPONENT:** POLY(AMIDE-IMIDE) POLYMER

**CAS NUMBER:** Not assigned.

**EC NUMBER:** Not assigned.

**PERCENTAGE:** 60-100

**COMPONENT:** GRAPHITE

**CAS NUMBER:** 7782-42-5

**EC NUMBER (EINECS):** 231-955-3

**PERCENTAGE:** 7-13

**COMPONENT:** POLYTETRAFLUOROETHYLENE

**CAS NUMBER:** 9002-84-0

**EC NUMBER:** Not assigned.

**PERCENTAGE:** 1-5

(See Section 8, "Exposure Controls, Personal Protection", for exposure guidelines)

## SECTION 3 HAZARDS IDENTIFICATION

**EMERGENCY OVERVIEW:****COLOR:** colored**PHYSICAL FORM:** powder or pellets**ODOR:** odorless**SIGNAL WORD:** CAUTION!**MAJOR HEALTH HAZARDS:** Handling and/or processing of this material may generate a dust which can cause mechanical irritation of the eyes, skin, nose and throat.**PHYSICAL HAZARDS:** Dust/air mixtures may ignite or explode.**POTENTIAL HEALTH EFFECTS:****INHALATION:**

Dust: Causes respiratory irritation. When overheated, polytetrafluoroethylene produces vapors that cause respiratory irritation. See Toxicological Information section (Section 11).

**SKIN CONTACT:**

No significant health hazards identified. Particles or fibers may cause slight discomfort similar to rubbing sand against the skin. Heated material can cause thermal burns.

**EYE CONTACT:**

No significant health hazards identified. Particles or fibers may cause slight discomfort similar to getting dust in the eye.

**INGESTION:**

No significant health hazards identified.

## SECTION 4 FIRST AID MEASURES

**INHALATION:** If adverse effects occur, remove to uncontaminated area. Get medical attention.**SKIN CONTACT:** Wash exposed skin with soap and water. For thermal burns, cool affected areas as quickly as possible by drenching or immersing in water until material solidifies. Do not remove material.**EYE CONTACT:** Flush eyes with plenty of water.**INGESTION:** If a large amount is swallowed, get medical attention.

## SECTION 5 FIRE FIGHTING MEASURES

**FIRE AND EXPLOSION HAZARDS:** Slight fire hazard. Dust/air mixtures may ignite or explode.**EXTINGUISHING MEDIA:** regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

**FIRE FIGHTING:** Move container from fire area if it can be done without risk. Do not scatter

spilled material with high-pressure water streams. Dike for later disposal. Use extinguishing agents appropriate for surrounding fire. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

**FIRE FIGHTING PROTECTIVE EQUIPMENT:** Firefighters should wear full bunker gear, including a positive pressure self contained breathing apparatus.

**HAZARDOUS COMBUSTION PRODUCTS:**  
Combustion products: carbonyl fluoride, hydrogen fluoride

## **SECTION 6 ACCIDENTAL RELEASE MEASURES**

Contain and remove by mechanical means. Vacuum or sweep out; avoid producing dust. Keep out of water supplies and sewers.

## **SECTION 7 HANDLING AND STORAGE**

**STORAGE:** No special requirements.

**HANDLING:** Minimize dust generation and accumulation. Take appropriate measures to prevent static discharges, which may include thorough electrical interconnecting, grounding of equipment, and/or conveyance under inert gas. Keep away from all ignition sources.

## **SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION**

**EXPOSURE LIMITS:**

**GRAPHITE:**

**GRAPHITE (**

2 mg/m<sup>3</sup> ACGIH TWA (respirable particulate)

**VENTILATION:** Control airborne concentrations below the exposure guidelines. If general ventilation is inadequate, local exhaust ventilation should be used to dispose of vapors from hot processing equipment, particularly during purging.

**EYE PROTECTION:** None required; however, use of eye protection is good industrial practice. Use dust goggles if high dust concentration is generated.

**CLOTHING:** None required; however, use of protective clothing is good industrial practice.

**GLOVES:** None required; however, use of protective gloves is good industrial practice.

**RESPIRATOR:** Use with adequate ventilation. Avoid breathing vapor or dust. If dust is generated and ventilation is inadequate, use respirator that will protect against dust/mist. If heated and ventilation is inadequate, use respirator which will protect against organic vapor and dust/mist.

## **SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES**

**PHYSICAL STATE:** solid

**APPEARANCE:** opaque

**COLOR:** colored

**PHYSICAL FORM:** powder or pellets

**ODOR:** odorless

**BOILING POINT:** Not applicable

**MELTING POINT:** 500 F (260 C)

**FLASH POINT:** >871 F (>466 C)

**FLAMMABILITY CLASSIFICATION:** Not Flammable.

**VAPOR PRESSURE:** Not applicable

**VAPOR DENSITY:** Not applicable

**SPECIFIC GRAVITY (water=1):** 1.45

**WATER SOLUBILITY:** <0.1%

**PH:** Not applicable

**VOLATILITY:** Not applicable

**ODOR THRESHOLD:** Not available

**EVAPORATION RATE:** Not applicable

**COEFFICIENT OF WATER/OIL DISTRIBUTION:** Not available

## **SECTION 10 STABILITY AND REACTIVITY**

**REACTIVITY:** Stable at normal temperatures and pressure.

**CONDITIONS TO AVOID:** Avoid heat, flames, sparks and other sources of ignition. Avoid contact with incompatible materials.

**INCOMPATIBILITIES:** oxidizing materials

**HAZARDOUS DECOMPOSITION:**

Combustion products: carbonyl fluoride, hydrogen fluoride

Thermal decomposition products: oxides of carbon, oxides of fluorine

**POLYMERIZATION:** Will not polymerize.

## SECTION 11 TOXICOLOGICAL INFORMATION

**EYE IRRITATION:** Testing not conducted. See Other Toxicity Data.

**SKIN IRRITATION:** Testing not conducted. See Other Toxicity Data.

**DERMAL LD50:** Testing not conducted. See Other Toxicity Data.

**ORAL LD50:** Testing not conducted. See Other Toxicity Data.

**INHALATION LC50:** Testing not conducted. See Other Toxicity Data.

### **OTHER TOXICITY DATA:**

Specific toxicity tests have not been conducted on this product. Our hazard evaluation is based on information from similar products, the ingredients, technical literature, and/or professional experience.

This polymer contains low levels of polytetrafluoroethylene (PTFE). Vapors which can cause flu-like symptoms are liberated from PTFE at temperatures above 800 F (427 C) or if cigarettes or other smoking materials are contaminated with polymer dust or machine waste. These flu-like symptoms are not known to occur with polymers containing low levels of PTFE.

Graphite dust can be liberated upon machining. Graphite dust can cause allergic skin reactions in susceptible individuals. Overexposure for 4 to 10 years to graphite dust can cause graphite pneumoconiosis (a disease of the lungs).

No component of this product at levels greater than 0.1% is identified as a carcinogen by ACGIH or IARC.

## SECTION 12 ECOLOGICAL INFORMATION

**ECOTOXICITY TEST DATA:** Testing not conducted. See Other Ecological Information.

**BIODEGRADATION POTENTIAL:** Testing not conducted. See Other Ecological Information.

**BIOACCUMULATION POTENTIAL:** Testing not conducted. See Other Ecological Information.

**OTHER ECOLOGICAL INFORMATION:** It is **unknown** whether published information exists or is useful for evaluating the ecological fate or effect of this product.

## **SECTION 13 DISPOSAL CONSIDERATIONS**

Dispose in accordance with all applicable regulations.

## **SECTION 14 TRANSPORT INFORMATION**

**LAND TRANSPORT ADR/RID:** Not regulated.

**AIR TRANSPORT IATA/ICAO:** Not regulated.

**MARITIME TRANSPORT IMDG:** Not regulated.

**U.S. DEPARTMENT OF TRANSPORTATION:** Not regulated.

**CANADIAN TRANSPORTATION OF DANGEROUS GOODS:** Not regulated.

## **SECTION 15 REGULATORY INFORMATION**

**PRODUCT CLASSIFICATION:** This product is not classified as dangerous under the Directives EC/67/548 (the "Dangerous Substances Directive") and EC/88/379 (the "Dangerous Preparations Directive") as amended and adapted.

**DANGER/HAZARD SYMBOL:** None required.

**EC RISK AND SAFETY PHRASES:** None required.

### **EXPOSURE LIMITS:**

#### **GRAPHITE:**

#### **GRAPHITE (**

2 mg/m<sup>3</sup> ACGIH TWA (respirable particulate)

**EC INVENTORY (EINECS/ELINCS):** In compliance.

**JAPAN INVENTORY (MITI):** Listed on inventory.

**AUSTRALIA INVENTORY (AICS):** One or more components not listed on inventory - For research and development purposes only.

**TSCA INVENTORY STATUS:** Listed on inventory.

**KOREA INVENTORY (ECL):** Not determined.

**CANADA INVENTORY (DSL):** One or more of the components of this product is not listed on the DSL.

**PHILIPPINE INVENTORY (PICCS):** Not determined.

**CHINA INVENTORY (IECS):** Not determined.

## **SECTION 16 OTHER INFORMATION**

**SUPPLEMENTAL INFORMATION:** This product, to the best of our knowledge, does not contain and is not manufactured with any Class I or Class II Ozone Depleting Chemicals (ODCs).

This MSDS is intended for only the selected countries to which it is applicable. For example, this MSDS is not intended for use nor distribution within North America. You should contact Solvay America company representative for the official North America MSDS.

The information given corresponds to the current state of our knowledge and experience of the product, and is not exhaustive. This applies to product which conforms to the specification, unless otherwise stated. In this case of combinations and mixtures one must make sure that no new dangers can arise. In any case, the user is not exempt from observing all legal, administrative and regulatory procedures relating to the product, personal hygiene, and protection of human welfare and the environment.